



FRIDAY, OCTOBER 5, 1877.

## Pullman Car Journal-Bearing.

The engravings represent a new form of journal-bearing, recently adopted by the Pullman Car Company, which is intended to provide an end bearing for the axle to resist the shocks and strains to which the wheels and bearings are subjected, and which cause the shoulders of the journal to wear away the brass very rapidly. Fig. 1 is a section longitudinal with the centre line of axle; the right half of fig. 2 represents a transverse section through the journal and bearing, and the left half an outside end view of the box with the cover removed. On top of the brass bearing is what may be called an angle plate, *B B'*. This is made of wrought iron stamped into the form represented in side elevation, end view and plan in figs. 3, 4 and 5. The form of this plate *B B'*, as shown in section in fig. 1, is that of a letter *Γ* laid on its side; the portion *B'* projects downward over the end of the journal-bearing. To this part a brass plate, *C*, is attached by two projections, which are cast on the brass plate and are riveted fast in corresponding holes in the angle plate. One of these projections is shown by dotted lines at *B'* in figs. 1 and 3, and both are represented by *c, c*, in fig. 4. It will be seen from the form of *B B'*, shown in fig. 3, that the brackets *D* on each side of it give great strength to the portion *B*, and enable it to resist the thrusts and shocks of the axle. It is held in position in the box by a shoulder at *a*, figs. 1, 3 and 5. The brass plate *C*, of course, resists the wear of the axle and is kept lubricated by the revolution of the collar *F*, the lower portion of which comes in contact with the packing in the box. When this brass plate is worn out, it is easily replaced with another. In order to be able to see when the bearing *A* is worn so much that the collar comes in contact with the angle bearing, a hole, *f, f*, is made in the angle plate

hold of very fine logs lying high and dry, the little water in their beds being totally inadequate to float anything. Some railroads were observed just as the loggers left them—unbroken. It would have well paid the lumbermen to have sent, last July, a number of the doubting Thomases, who croaked all the season through that there would be no shortage in the log supply, over this line of railway into the Chippewa pines, to show them whether or not their clamor about a big log stock was in accordance with the facts.

After leaving the Chippewa district the road crosses the Penoka iron range, which forms the water shed of this portion of the State. The scenery there is wild and picturesque in the extreme. The road follows the devious course of Bad river, and turns the traveler wrong side out and upside down in a vain attempt to keep his bearings as to the points of compass. It crosses the stream something like 18 times, and was a veritable bonanza to the bridge-builders.

Speaking of bridges the Wisconsin Central has some of the finest iron trestles in the world. The two most notable ones are across Silver Creek and White River. The latter is 1,600 feet in length, and 103 feet high. The train on which the writer crossed was stopped to allow an examination of the magnificent structure. Each of the supporting columns rests upon stone foundations, and though to the inexperienced eye it all looks fragile as a spider-web, it is in reality solid as a rock. Mr. Guy Campbell, of Stevens Point, Master Mechanic of the road, with great courtesy and no little mechanical pride, pointed out the merits of a work he may well be proud of. He claims that there is but one other trestle bridge in the world of equal magnitude—and that is in South America. The view from the platform is one long to be remembered. White River is a beautiful stream of pure spring water, not very wide, but of the remarkable depth of 10 feet and upwards, and flows leisurely along the bottom of the immense ravine spanned by the bridge. The timber grows up to and overhangs its banks, and away to the northeast and southwest its course is marked by the depression in the forest—not a naked spot of land being discernable in all the country around, save that cleared for the road bed. One realizes an impression of—of being pretty high up, to say the least—in gazing down upon the tops of the tall pines which fill the valley with their rich green foliage. Of White River and its commercial advantages more will be said at another time. For his courtesy in pointing out items of interest and allowing us the luxury of a ride on the locomotive to Silver Creek bridge—a smaller edition of the first—Mr. Campbell has the thanks and best wishes of the *Lumberman* representative.

The Penoka iron range is reported to contain a very good deposit of ore, and attempts were made years ago to establish a mine near the present line of the road. With the iron trade in its present depressed condition, however, that industry will

of Manitoba to the markets of the world. Its eastern terminus will be Prince Arthur's Landing, on the north shore, and Ashland will be the most favorable point to which a transfer of freight or passengers can be made. Indeed, it will not be strange if the encroachment of the iron horse into this land of eternal solitude will, eventually and veritably, cause the wilderness to blossom like the rose, and, within this progressive century, enable us to see cultivated farms with well-filled granaries where now the vision is obstructed by tangled brush and dying timbers. Who shall say?

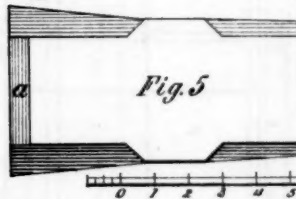
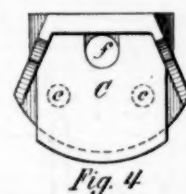
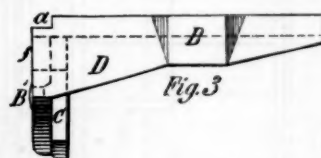
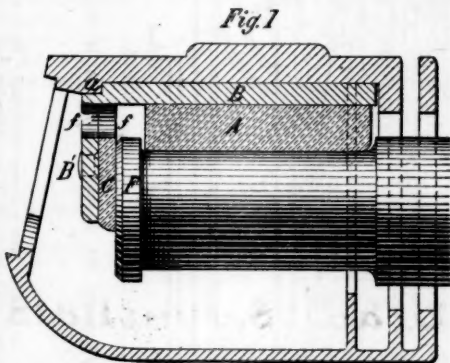
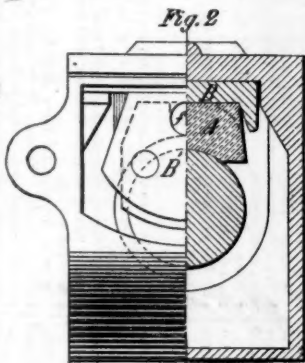
## Contributions.

## Duties and Responsibilities of Railroad Directors.

TO THE EDITOR OF THE RAILROAD GAZETTE:

Within the last decade or two, actions have been taken and contracts made by directors of railroad companies which lead one to infer that some of the directors are not well informed as to their duties and responsibilities. Perhaps a few citations from legal opinions and decisions may induce a more careful consideration of these matters.

It has been judicially decided that "the relation existing between a director and the corporation is that of a trustee." It follows that the laws and decisions applicable to trustees are also to be applied to directors. It is held that "a trustee is never permitted to partake of the county of the party for whom he acts," and therefore it is also held that "if a trustee, though strictly honest, should buy for himself an estate of his beneficiary, and then sell it for more, he would be held still to remain a trustee, and not be permitted to sell to or for himself." It will be observed that even though no taint of dishonesty may exist, the prohibition is absolute and peremptory. Also it may be fairly inferred that the restriction against selling the beneficiary's estate to himself will include selling it to a corporation in which he is directly interested, and will also include leasing the estate, or making any contract whereby any profit or advantage will accrue to himself, or to a corporation in which he is interested. This view is confirmed by another decision, that "a trustee is never permitted to make any profit to himself in any of the concerns of his trust. The



PULLMAN CAR JOURNAL-BEARING.

and in the brass plate, so that by removing the box cover the position of the collar *F* in relation to the plate *B* can be seen, or, in other words, it can be observed how much the bearing *A* has worn.

These bearings have been applied with great success to a number of the Pullman cars. Further information may be obtained by addressing Mr. A. B. Pullman, Chicago.

## Over the Wisconsin Central.

The following letter, dated at Ashland, Wis., Sept. 18, appeared in the *Northwestern Lumberman* of Sept. 29:

A hundred and eighty-nine miles, and every inch a forest. That is the experience of the traveler who makes the pilgrimage from Stevens Point to Ashland, via the Wisconsin Central Railroad. We believe that men who could project and carry into execution so bold a scheme as the building of a first-class railroad for such a distance, through what was so literally a howling wilderness, and deserving of nothing but credit, even if they did get a big land grant. The magnitude of the undertaking can only be appreciated by a trip over the line or a close study of a section map of the State. Before Phillips & Colby laid their iron track this side of Stevens Point, the country lying north of town 30 was an uninhabited wilderness extending from the St. Croix River on the west to the Menominee on the east, a distance of over 300 miles in a straight line. The Wisconsin Central has pierced the very heart of this great section, and opened it up to civilization, and, shall it not be added, to a future full of promise for ultimate prosperity.

After leaving Stevens Point the road extends about 40 miles in a northwesterly direction. Then it turns and runs due north for about 75 miles when it again bears to the west of north crossing the Penoka iron range and strikes Lake Superior near the head of Chequamegon Bay. Within four or five years since the road was built some 20 towns have grown into life, and populations varying from 50 to 300 or 400 souls, and at nearly every one rises the smokestack of a saw or shingle-mill. Until within the past year trains were brought no further north than Bitternut Creek, the rest of the distance to this point being made by stage, although the rails have been laid from Ashland to Penoka for a long time. In seeking a route the railroad company made four or five surveys between Stevens Point and this place before definitely locating the line. Then the engineers picked out about all the cedar and tamarac swamps in the whole distance. Some pine is immediately contiguous to the line of road, and large quantities may be seen at short distances from the train in passing. The timber through which this road passes belongs respectively in the three greatest pine districts in the Northwest. After leaving Stevens Point the line first passes through the western portion of the Wisconsin River pines. Next it crosses the upper waters of the Black and its tributaries, then the great Chippewa district, comprising the Elk, both forks of the Flambeau, Bitternut Creek and the upper waters of the main Chippewa itself. Never did a railroad invade such a timbered country before, in this or any other country. In crossing the Chippewa and its tributaries we obtained several glimpses of the present source of long faces in the Mississippi valley—the hung-up logs. In many places the streams were as full as their banks would

not form one of the prominent features of this region. The Wisconsin Central was built for the lumber traffic and has been in operation just about long enough to see it go all to smash, so to speak. As above stated, there are about 24 saw-mills on its line, all dependent upon it to carry their product to market. Most of them, or rather their owners, have passed through the various stages of bankruptcy, and the original founders still retain control of but a few. The lumbermen pitched their tents upon the line of the Central at the wrong time to make anything out of manufacturing lumber. From the day the first saw was set buzzing north of Stevens Point prices have grown lower and better than until the margin is a long way over on the wrong side of the account. About the only thing the Wisconsin Central millers have done is to raise particular mischief with a number of markets, such as Milwaukee, Minneapolis, Dubuque and other Mississippi points, and even Chicago itself, by the remarkably low prices they have sold for. But it was a matter of life or death, with the chances strongly in favor of the old man. The mills when built must be run, and the lumber when sawed must be sold. Many of the operators had next to nothing when they began, so could not be much worse off when the inevitable end came. All have realized the sad lesson of the past two or three years—that lumber, as an article of merchandise, represents a fixed cost, and can no more be sold regardless of it than can any other. Of the future for them it can only be said that it depends entirely upon circumstances over which they can exercise very little control. They are now making lumber at about the minimum of cost, and can expect little or no help from that quarter. The railroad company is transporting it at rates which can yield no adequate return, which closes that avenue. To curtail their supply only means to stop business and let the rest of the country do it. The only hope is in better times, and when they will come everybody has an equal chance of knowing.

The railroad company has an 800,000 acre land grant, less the number of acres sold to date. Owing to the several changes in locating the line, speculators obtained possession of a large portion of the best pine lands tributary to it. The timber is as good as any in the State, as it is drawn, as before mentioned, from the great pines which furnish the bulk of Wisconsin's lumber product. The soil is of the very richest and most productive in the Northwest, when you can get at it, and if a man has a faculty for clearing up underbrush and grubbing out stumps, why he will be as happy here as anywhere, and will have a splendid farm in the end. Plenty of hard timber grows along the line, and any quantity of cedar, good for posts and ties. The loggers on the Chippewa and Black rivers make the various stations supply depots for their camps in winter, as it is much easier to transport their men, provisions and tools in this way than by the old tote roads.

It was originally intended to continue the Wisconsin Central road from Ashland to Duluth, connecting with the Northern Pacific, and making a very valuable link in a future transcontinental route. The idea is not yet abandoned, and a general revival of business would undoubtedly hasten its fulfillment. Another project is to build a line from Spencer across to Saint Paul, making a direct, and it is alleged, shorter route from Chicago and Milwaukee than any other. Quite a business is now being done in freight for points on Lake Superior. The company has a very fine dock at Ashland, where freight can be transferred to boats which make daily trips to almost all points. Also some business will be done with the Canada Pacific, which will, in a few years, open up the rich wheat fields

comprehensive terms of this decision will include all "profits," whether direct or indirect.

A late Chancellor of Great Britain decided that "when a trustee had used the trust fund in speculations, though the loss, if any, must fall upon himself, yet for every farthing of profit he shall be held accountable to the trust estate."

Though the terms of this dictum only include "speculations," yet the principle involved, upon which the decision is based, will apply equally to other transactions, such as leases or agreements.

If this view be correct, those who serve as directors in two corporations, and who, as such directors, make contracts of any nature between the two companies, will act wisely if they carefully consider the responsibilities they assume before making such agreements.

Also, directors who make agreements for their companies with corporations in which they are personally interested, such as sleeping-car companies, drawing-room car companies, rolling stock companies, transportation companies, rail mill companies, iron manufacturing companies, coal companies, bridge companies, and the like, may well reflect upon the possibility of being called to account.

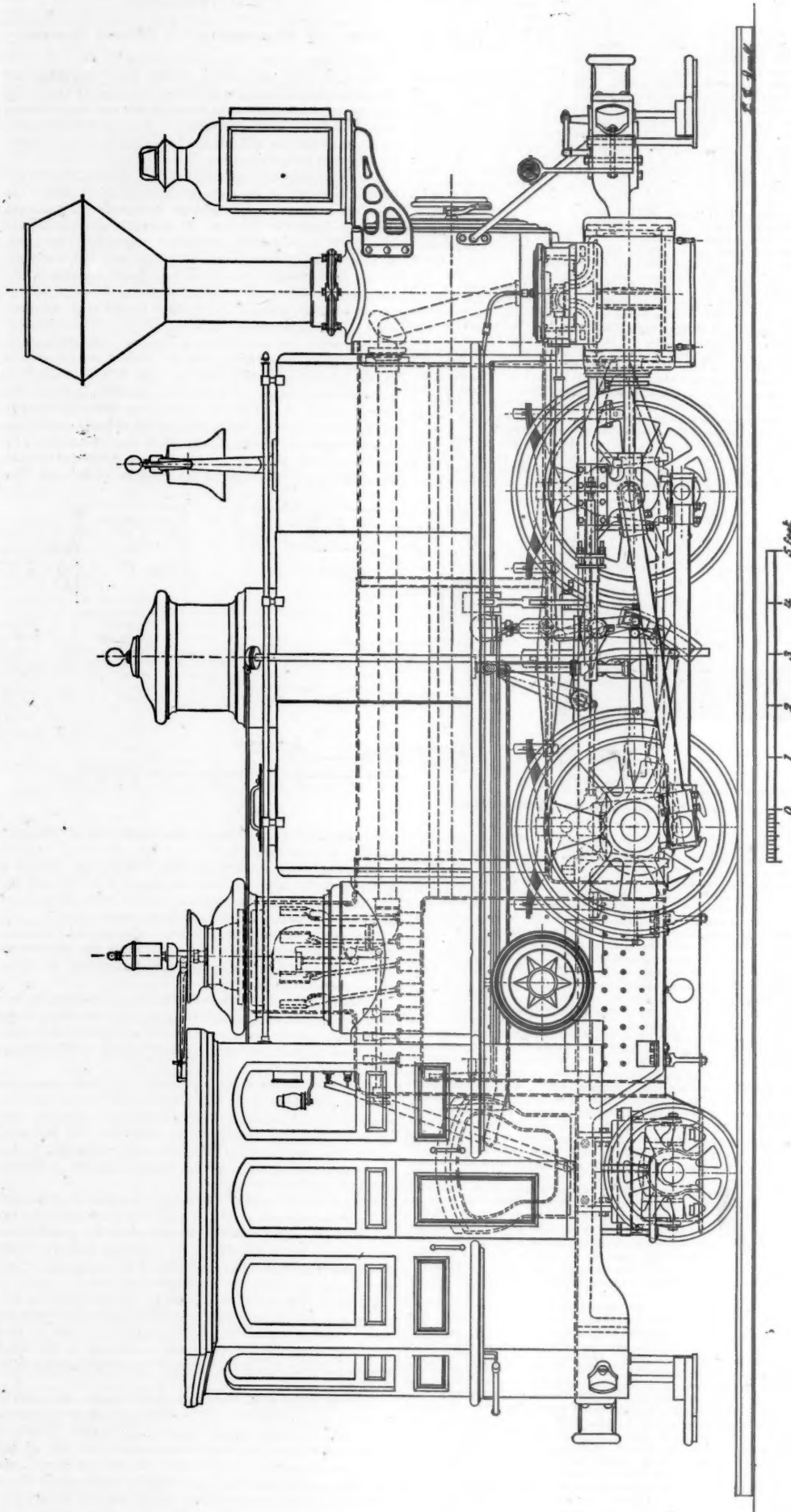
Another decision is that "an agent is bound to exert his care and skill in making as good a bargain as practicable for his principal, and cannot retain for himself any of the profits or advantages of a contract made by him, without consent of the principal, given with a full knowledge of all the facts." "All profits made by the agent belong to the principal."

Suppose a man, acting as director of two corporations, has occasion to vote in each upon a proposed agreement between them. He may in one board be required to "exert his care and skill" in making a bargain; and as director in the other company he may be equally bound to "exert his care and skill" in securing its rejection.

Another decision is, that "an agent cannot, consistently with his duty to his principal, accept any employment hostile to the interests of the latter." Also it is held that "Courts of equity will not only hold trustees responsible, but will go farther, and, in cases requiring such a remedy, will remove the old trustees and substitute new ones." Stockholders whose dividends are lessened or entirely cut off will not always content themselves with murmuring; they may be provoked to take more effective measures.

Any one accepting the position of a director thereby assumes the duties and liabilities thereto pertaining, and it behooves him to act cautiously. A trustee, in acting for his beneficiary, must disregard his own private interests. He must act exclusively for the benefit of his trust. If he cannot, there is but one alternative—to resign.





SIX - WHEELED TANK LOCOMOTIVE: By the Brooks Locomotive Works, Dunkirk, N. Y.

#### Specification of Six-Wheeled Tank Locomotive, by the Brooks Locomotive Works.

The engine has four-coupled driving-wheels and one pair of trailing-wheels under the foot-board.

**General Dimensions.**—Cylinders, 16 in. diameter and 23 in. stroke. Driving-wheels about 48 in. in diameter outside of tire. Gauge, 4 ft. 8 1/2 in. Fuel, bituminous coal. Weight of engine in working order, including water in tank, about 65,000 lbs. Total wheel-base of engine, 14 ft.; rigid wheel-base, 7 ft. **Boiler.**—To be made of Pennsylvania iron, 3/4 in., or homogeneous cast steel, 3/8 in. thick. Cylinder courses one plate each with horizontal seams placed above the water-line. Horizontal seams and waist connection seams double-riveted. Boiler to be strongly made and well braced in all its parts, provided with cleaving holes, etc. Cylinder part of boiler 46 1/2 in. diameter at smoke-stack end. Cylinder part of boiler 38 in. diameter at smoke-stack end, made telescoping back. Dome, 38 in. in diameter and 38 in. high, placed over fire-box. Fuses, 33 in. number, 2 in. diameter, 11 ft. long, set with copper bushing at fire-box end. Before lagging is put on, boiler to be fired up and tested as perfectly tight under a steam pressure of 165 lbs. **Fire-Box.**—To be made of homogeneous cast steel, 38 in. long, 35 in. wide inside, sides, crown and back sheets, 16 in. thick; due sheets, 1/4 in. thick. Water space, 3 in.; back and sides, 4

in. front. Stay bolts, 7/8 in. diameter, placed not over 4 1/2 in. apart, screwed and riveted over bolts at both ends. Crown made of bars iron, 4 1/2 x 3/4 in., welded at ends, placed not over 5 1/2 in. from centre to centre, and the angle bars bearing on side sheets. Crown to be secured by a horizontal line of rivets, placed not over 4 1/2 x 3/4 in. apart. Smoke stack, 14 in. diameter, for bituminous coal. **Patent relief valves** placed in dome, one set in safety valves, the other adjustable by a lever to limit the pressure desired. **Cylinders.**—Placed horizontally; each cylinder cast in one piece with half saddle, right and left-hand cylinders relieved and interchangeable, accurately planed, fitted and bolted together in the most approved manner. **Frames.**—Of hammered iron, with pedestals welded on, planed full length. Top bar, 3 1/2 x 2 1/2 in. Pedestals cast with cast-iron gibs and wedges, to prevent wear by the boxes. **Yoke.**—Extending across the frame. **Pistons.**—To have cast-iron spider and follower, with Dunbar's patent steam packing, with rods of patent cold rolled iron. **Guides.**—Of hammered iron, case-hardened, 4 in. wide, 3 in. thick, fastened to yoke. **Valve Motion.**—Approved shifting-link style, graduated to cut off equally at all points of the stroke. Links of best ham-

mered iron well case-hardened. Rocker shafts of wrought-iron with journals 3 in. diameter, and 1 3/4 in. long; arms 1 1/2 in. thick. Reverse shaft made with arms forged on. **Driving Wheels.**—Four in number, 48 1/2 in. diameter inside of tire. Centres of cast-iron, constructed with hollow hubs and rings, cold spokes. **Tires.**—Of cast-steel, flanged, 5 1/2 in. wide, and 2 1/2 in. thick when finished. **Driving Axles.**—Of best hammered iron; journals, 6 1/2 in. diameter, and 8 in. long. Wheel fit, 6 1/2 in. diameter, 6 1/2 in. long. **Wrist Pins.**—Of best cast-steel. Wheel fit, 6 1/2 in. long and 4 1/2 in. diameter. Main wrist, 3 1/2 in. in diameter and 3 1/2 in. long. Side-rod wrist, on main pin, 1 1/4 in. in diameter and 3 1/2 in. long. **Feed Water.**—Supplied by one brass pump with valves and less brass tubing. **Engine Frame.**—To have Jewell's patent swing and radial motion centre. Frame of wrought-iron. Pedestals cast together, planed and bolted to frame. Wheels, 30 in. diameter, axle of best hammered iron with inside-bearing journals, 5 in. diameter, 10 in. long. Wheel fit, 5 in. diameter, 7 in. long. **Engine Cyl.**—To be substantially built of ash and planed, well finished, and securely braced to boiler and running boards.

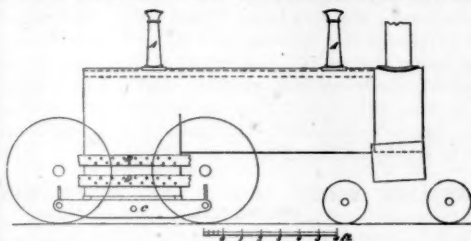
**Tank.**—Constructed from first quality Pennsylvania tank iron with angle-iron corners well braced. Plates of No. 7 iron. Capacity, 1,000 gallons; placed over boiler and securely fastened. **Finish.**—Boiler lagged with wood, jacketed with Russia iron secured by brass bands. Dome lagged with wood, with sheet-iron casing on body. Top and bottom ring of cast-iron. Cylinders lagged with wood, jacketed with sheet-iron, with cast-iron heads. Steam chests case with iron. Top cover to be made of cast-iron. Cylinders oiled from cab by pipes under jacket. **Miscellaneous.**—Engine to be furnished with running boards extending from cab to smoke box, to be made from oak or ash, edges bound with brass. Hand rails, a complete set of tools consisting of two jack screws, pinch bar, hard and soft hammers, monkey, packing and flat wrenches, chisels, pail, broom, coal rick, ash hoe, tool boxes, etc. Sand-box, operating valves with lever from cab, signal and alarm bells, whistle, steam and water gauges, heater and gauge cocks, bracket and board for head-light bolted to smoke-box, oil cans, etc., etc. Cylinder, pet cocks and blower cock operated from cab.

## The Springfield Locomotive

TO THE EDITOR OF THE RAILROAD GAZETTE:

The importance which attaches to all novelties pertaining to the railroad or locomotive induces me to send you an outline illustrative of some of the distinctive features of an engine which has been the outgrowth of many years of hard experience in working the heavy grades of the Boston & Albany Railroad.

Most of the engines of this company are now of this type, and they have proved eminently efficient and satisfactory. It will be seen by the outline that Mr. Eddy has wisely adhered to the no-dome, flush-top style of boiler; dry steam being supplied to the cylinders by means of a perforated pipe lying close up to the crown sheet of the boiler (see dotted lines), the perforations being made only in the upper side of the pipe; the perforated area decreasing in width from the centre towards each end of the pipe so that the tipping of the engine on the grades shall not throw water into the pipe. The aggregate area of the perforations exceeds by several fold the area of the cross-section of the pipe, hence there can be no danger of water entering the pipe by suction. The throttle-valve is placed in the smoke arch close to the cylinders. This is another com-



mendable feature of the engine, as it permits but little waste of steam and time in starts and stops. The springs and equalizing levers are arranged in a pair of stout plate-iron girders (C) placed beneath the mud-ring of the fire-box, there being just room enough between them for the ash pan, their outer face being about flush with the face of the boiler. This arrangement allows of a much wider fire-box than usual. The side bars (D), which carry the main boxes being only an inch or an inch and an eighth in thickness where they pass the fire-box and but seven or eight inches wide, which gives them ample strength. The stand pipes (A) discharge the escaping steam from the safety valves above the out-look of the engineer.

Both passenger and freight engines are of this type; the only difference being that the passenger engines have a larger wheel and a shorter cylinder, everything being constructed upon the interchange system as much as possible.

F. G. WOODWARD.

## Railroad Reports Required by Law.

PINE BLUFF, Ark., Sept. 26, 1877.

TO THE EDITOR OF THE RAILROAD GAZETTE:

Having been a careful reader of your valuable journal for quite a long time, I have noticed many communications upon various topics touching the subject of a "reconstruction" or reorganization of the present railroad systems of the country; some of which, in the opinion of the writer, settle "the question" finally, while others are simply suggestions, or inquiries, asking information.

In connection with this subject, I desire, and will be much gratified to have your opinion editorially upon the following questions, if it is not asking too much, giving your ideas as to workings of such a proposition.

First, a uniform system of accounts in all departments of railway service, to be perfected by a meeting of the auditors of all railways, and every road to be required by law to adopt this system.

Second, that all railroads be compelled by law to make their reports uniform, and in accordance with the general system of accounts as adopted. These reports to be made under oath, annually or semi-annually, to the board of railroad commissioners of each State, and by them to be published in one or more papers at the capital of each State; record of such reports to be kept by the commissioners open to the inspection of the public at all times.

Third, that a severe penalty be attached to the law for neglect, or the rendering of false reports, making the President, Treasurer and boards of directors responsible for the same.

It occurs to your correspondent that a law of this nature would be very good for honest corporations, while it would shut up many of the rotten concerns now before the country. What say you? X.

## Test of Atwood's Improved Steel-Tired Railroad Car Wheel.

This wheel, which is represented in section in the engraving herewith, consists of a cast-iron centre, C, with a steel tire, A. The peculiarity of the wheel consists in the manner of holding the tire on the centre. This is done by means of a hemp packing, K, which is forced into what may be called a corrugated cavity, the form of which is shown in the engraving. From this it will be seen that grooves are rolled in the tire and cast in the rim of the wheel-centre, but leaving an opening all around at M, between the tire and wheel-centre, through which the hemp packing is inserted piece by piece, and forced in with a caulking tool and mallet. Over this opening a ring, M, is fitted, which is held in position by a dove-tailed groove or collar inside the ring, which is turned on the wheel-centre. The ring is heated and thus expanded sufficiently to be slipped on over the collar.

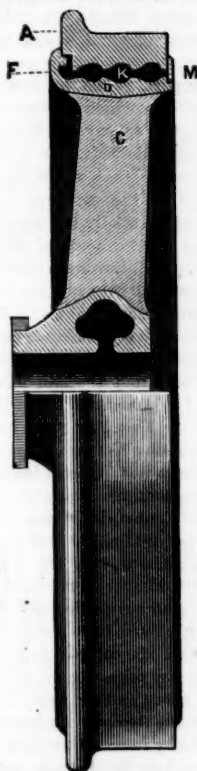
The form of the grooves represented is used so as to cause the packing to "interlock," as the inventor expresses it, and

thus hold the tire on the centre without bolts or other attachments. The ring M on the outside is intended merely to cover the opening through which the cavity K is packed. On a flange in the inside of the wheel-centre a number of pins or lugs (one of which, F, is shown in section in the engraving) are cast. These fit into holes or sockets in the tire which are bored considerably larger than the pins, so that the weight will not bear on the pins. The object of these pins is to hold the tire when the brakes are applied, and thus prevent it from slipping.

In the following report a test which was recently made of these wheels is fully described:

A test of the Atwood steel-tired railway wheel was made at the shops of the Harlem railroad in New York, on Tuesday, Sept. 25, 1877. The test was made on a 33-in. wheel which had run 40,000 miles under a Wagner drawing-room car, running between New York and Boston, the tire of which had become loose. The wheel was placed on a hydraulic wheel press, and the tire then pressed off, in order to show that the wheel was safe, even if the tire should work loose. The rim of the wheel-press was 7 1/2 in. diameter, the area of which was 48.7 square inches. The pressure was measured by a Schaeffer & Budenberg hydraulic gauge, the index of which was divided into tons of 2,000 lbs.

On subjecting the loose tire to pressure it started with a pressure of 1/2 ton per square inch, which is equal to a total pressure of 6,087.5 lbs. (about three tons). At a pressure of 1/2 ton per square inch, equal to a total pressure of 48,700 lbs. (24.3 tons), the small ring, on the outside of the wheel, sprang off. On starting the pump again, the tire started on its hemp seat at a pressure of 1/2 of a ton, or a total pressure of 54,787.5 lbs. (27 1/2 tons). The hub of the wheel then bore up against the backing, so that it was necessary to remove the wheel



## ATWOOD'S IMPROVED STEEL-TIRED RAILROAD WHEEL.

from the press and rearrange it. On starting the pump again the gauge indicated a pressure of 1/2 ton per square inch when the tire started. The gauge then rose to 1/2, 1, 1 1/2, 2, and finally to 1 1/2 tons (30 1/2 tons), as the tire was pressed off. The gauge then commenced to fall. On measuring the tire it was found that it was pressed off 2 1/2 inches on one side of the wheel, and 3 1/2 on the other. A tire which was securely fastened to the wheel was then tested. It started at a pressure of 1 1/2 tons per square inch, equal to a total pressure of 127,837.5 lbs. (63 1/2 tons). Some deductions should be made from these pressures owing to the friction of the packing of the rim, but even with this the hemp packing shows an extraordinary resistance to lateral pressure.

WILLIAM WOODCOCK,

Master Mechanic Central Railroad of New Jersey;

C. E. GAREY,

Master Car Builder New York &amp; Harlem Railroad;

M. N. FORNEY,

Editor Railroad Gazette.

## General Ticket and Passenger Agents' Association.

At the semi-annual meeting in Boston, Sept. 14-18, the usual address was omitted, Mr. Charlton, of the Chicago & Alton, who had been chosen to deliver it, having asked to be excused on account of insufficient time for preparation. In addition to the usual routine business of the fall meeting, resolutions were adopted providing that when new forms of tickets are prepared and placed on sale a sample of each shall be sent to all roads interested, and that the rule with regard to half-fares for children be changed to read "Children of 5 and under 12 years of age, half-fare."

Another resolution provides that the following be printed on the title page of the convention tariff:

"All tickets must be reported as sold to the roads over which they read, and shall not be reported to roads over which they do not read, even if they are honored over such roads, except by consent of the road or roads over which such tickets read."

Another resolution adopted requires that baggage shall be checked only by the route over which the owner's ticket reads, without any deviation, and if it cannot be checked through by such route, it shall be checked only so far as is possible by the same route; and that the members of this association instruct their general baggage agents that the practice forbidden by this association must be absolutely stopped.

The Executive Committee was instructed to examine the reports of previous meetings and make a collection of the resolutions passed relating to the proper conduct of passenger business, such collection to be presented to the next convention.

A communication was received from Mr. A. V. H. Carpenter, of the Chicago, Milwaukee & St. Paul, of which the following is a part:

"I wish to invite attention to a plan for conducting excursion and tourist traffic in the interest of railway owners as distinguished from scalpers or speculators. The idea being to require signature to a contract in duplicate, at the starting point, one copy thereof to be forwarded to the destination (or return starting point), the agent at starting point to sell ticket to such destination at full tariff rate, and give party an order on agent at destination for return ticket at such a percentage of tariff rate as, added to the fare one way, shall make the desired percentage of tariff rate for the round trip."

"On presentation of such order by the party to whom the out-going ticket was sold, and on his or her identification as the party signing the duplicate contract aforesaid, such agent shall sell a limited return ticket at the agreed rate—the limit not to extend forty-eight hours beyond schedule time between the starting and destination points."

"This idea is borrowed from the postal money-order system."

The suggestions made were referred for consideration to a special committee, consisting of Messrs. W. A. Thrall, Chicago & Northwestern; A. V. H. Carpenter, Chicago, Milwaukee & St. Paul; J. N. Abbott, Erie; L. P. Farmer, Pennsylvania; James Charlton, Chicago & Alton, and C. P. Atmore, Louisville & Nashville.

Mr. George H. Headford, Missouri Pacific, was chosen to deliver the address at the spring meeting, and Jacksonville, Fla., was selected as the place of meeting.

Appropriate resolutions were adopted with respect to the death of Mr. D. M. Boyd, Jr., late of the Pennsylvania.

The meeting closed with a dinner, at which many speeches were made. A number of the members, after the close of the meeting, joined in an excursion to the White Mountains, going by the Boston & Lowell and Boston, Concord & Montreal, and returning by the Portland & Ogdensburg and the Eastern roads. The excursion included a trip to Lake Memphremagog over the Passumpsic road.

## Master Car Painters' Association.

The eighth annual convention of this Association was held at the Eldridge House, Albany, N. Y., Sept. 19. The President, Mr. M. W. Stines, of the Boston & Albany road, opened the session with some appropriate remarks, urging the members to take a personal interest in the business that had called them together, so that the results might be mutually advantageous by imparting information in reference to the various systems and methods of painting cars.

The Secretary submitted his annual report, showing that the organization was in a prosperous condition, and that its membership was being increased by the addition thereto of some of the best master car painters in the country. Its financial condition was also satisfactory, and with earnest personal efforts the best results were to be looked for in the future.

After the election of officers for the ensuing year the subjects appointed for discussion were then taken up. On "Surfacing" there was a brief discussion. On the "Preparation and Embellishment of Head-Linings" there was a longer discussion, the general opinion being against varnishing head-linings, while several members advocated a less elaborate style of ornamentation than that now common, confining the work chiefly to the borders and leaving the centre portions plain.

A report on "Ornamentation, Sizing and Colors" was then presented, which induced a long discussion, several members giving their experience with sizing of various kinds, while others criticised various styles of ornamentation in common use.

Another long and valuable report on "Adulterations of Colors and Oils, and Causes of Fading" was presented and discussed.

The following subjects were designated for discussion at the next annual meeting—also the members who are to open the discussions:

Priming of a Car.—J. H. Will, New York & Harlem, Morrisania, N. Y.

What makes the best Head-Lining Filler?—A. N. Bradley, Ohio & Mississippi, Cochran, Ind.

What is the best Filler for Hard Wood previous to Varnishing?—H. C. Burch, Wagner Car Works, West Albany, N. Y.

Burning of Old Paint from Car Bodies.—W. H. Jewett, Vermont and Massachusetts, Fitchburg, Mass.

Rubbing of Varnish—Which gives the best lustre; a job that is rubbed, or two coats of finishing varnish without rubbing?—R. T. Beazley, Maine Central, Waterville, Me.

Which is the most economical and best Filler for Cars, Rough Stuff or a Scraping Filler?—R. McKeon, Atlantic & Great Western, Kent, Ohio.

Is it any longer practical to Surface in any manner for a Railroad Car?—M. W. Stines, Boston & Albany, Springfield, Mass.

That each member of the Association in charge of paint shops, give a detailed statement of their formula and modus operandi of Painting and Varnishing Cars.—D. D. Robertson, Michigan Central, Detroit, Mich.

A resolution was unanimously adopted thanking the retiring President, Mr. M. W. Stines, for the faithfulness, ability and courtesy with which he had discharged the duties of the chair.

The next annual meeting will be held at Cleveland, Ohio, on the third Wednesday in September, 1878.

## Early Railroads in Minnesota.

The St. Paul Pioneer-Press of Sept. 23 says: "A small party talking of our railroad prospects yesterday was joined by F. R. Delano, Esq., who has had something to do with railroads. Among other reminiscences, he mentioned the fact that twenty years ago the fifth of this month he left St. Paul on foot, and followed the engineer's stakes through to Crow Wing, at which place he arrived on the 20th of September, 1857. Col. Crooks, of this city, the engineer in charge of the survey and location, having done his work in July and August of that year. At that time the contract for building the railroad from St. Paul to St. Cloud had been let to Selah Chamberlain, and he had commenced work on the St. Paul end, and it was expected to let the work of building from St. Cloud to Crow Wing to be completed in 1858. This was not done and twenty years have rolled away, and now two at least of the men who were then upon the line interested and engaged in its construction—Crooks and Delano—are actively engaged in its completion with every prospect of seeing it done within the present month. Twenty years ago Delano was a director in the company which then undertook to build this road, and to-day he is a director in the company, which is building it."

"Twenty years ago, the 3d of March last, the land grant act passed Congress to aid in the construction of this line. Twenty years have the people of St. Cloud, Sauk Rapids, Watb, Little Falls and Crow Wing waited for the iron horse to pass north through their towns. All have stood the waiting pretty well except Crow Wing; this town, the then proposed northern terminus for a short time of the road, and the most important point at that time in Northern Minnesota, has given up the ghost, and nothing but the old church and two houses remain of its former glory; the survey stakes were moved a mile away to straighten the line, and now the locomotive goes screaming along to Brainerd to join the Northern Pacific road, a town and road at that point unthought of twenty years ago."

"The first work on this railroad from St. Paul to Crow Wing was the first railroad work done in the State of Minnesota. The first locomotives ever run in the State were run on this road."





Published Every Friday.

CONDUCTED BY

S. WRIGHT DUNNING AND M. N. FORNEY.

## CONTENTS:

Page.	Page.
ILLUSTRATIONS:	EDITORIAL NOTES..... 447
Pullman Car Journal Bear- ing..... 443	GENERAL RAILROAD NEWS:
Four-Drawer Switching Loco- motive..... 444	Elections and Appointments..... 448
The Springfield Locomotive..... 445	Personal..... 448
Atwood's Steel-Fired Wheel..... 445	Traffic and Earnings..... 448
CONTRIBUTIONS:	The Scrap Heap..... 448
Duties and Responsibilities of Railroad Directors..... 443	Rail Road Law..... 449
The Springfield Locomotive..... 445	Old and New Roads..... 449
Railroad Reports Required by Law..... 445	ANNUAL REPORTS:
EDITORIALS:	Northern Pacific..... 451
The Pullman Palace Car Com- pany..... 446	Louisville, Cincinnati & Lex- ington..... 452
Questions Which Should be Asked and Answered..... 446	Pullman Palace Car..... 452
The Michigan Central..... 447	Michigan Central..... 452
Record of New Railroad Construction..... 447	The Minor Ohio Railroads in 1875-6..... 452
	MISCELLANEOUS:
	General Ticket and Passenger Agents' Association..... 445
	Master Car Painters' Associa- tion..... 445

## Editorial Announcements.

**Passes.**—All persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.

**Addresses.**—Business letters should be addressed and drafts made payable to THE RAILROAD GAZETTE. Communications for the attention of the Editors should be addressed EDITOR RAILROAD GAZETTE.

**Advertisements.**—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMNS. We give in our editorial columns OUR OWN opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

**Contributions.**—Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to ALL DEPARTMENTS of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.

## THE PULLMAN PALACE CAR COMPANY.

The report of this company published on another page gives a general view of the results of its business for the year reported (ending July 31, last), but gives no information as to what that business is or the details of it. And it is more difficult with this company than with a railroad company to get a definite idea of its business without explanations. It has very little fixed tangible property: the instruments with which it earns money are cars which circulate in almost all parts of the United States and Canada, and, moreover, they are not all its own. In the course of its career in absorbing other sleeping car lines it has made many contracts, presumably on various terms, some of which put it in charge of sleeping car routes without giving it property in the sleeping cars. The contracts are also for various periods. As the company's profits largely depend on the nature of these contracts, and its prospects on the duration of profitable or unprofitable contracts, the fullest account of the company's tangible property does not enable us to judge of the value of its securities, and neither is ever so accurate a record of the year's business sufficient for this purpose.

There is scarcely anything connected with our railroads so well known as the cars of this company, and especially is this the case abroad, where the Pullman cars have been remarked and praised by almost every traveler who has visited this country within the last ten years. The sleeping car was an innovation in passenger transportation, and one greatly improving the journeys over our long American routes. But the enterprise of the Pullman Company was less remarkable in the provision of places for the traveler to sleep, which had been done before, as in its efforts to minister to his comfort in every way. It recognized the fact that civilized travelers desire something more than the accommodations of a camp; that they not only need beds at night but good beds; that they appreciate cleanliness; that one who travels twenty-four hours continuously needs to wash as well as to sleep. In short, it acted on the principle that travelers desire and are willing to pay for in the cars while traveling such accommodations as they are accustomed to out of them. Not all of them could be supplied, but the mistake made before the days of the Pullman Company seems to

been in supposing that no other accommodations were practicable in cars than in the stage-coaches which they had displaced. It is true that a great deal remains to be done, and it is also true that many desirable things apparently never can be done in the confined space of a railroad car; but the Pullman Company has certainly made great and unremitting efforts to increase the comforts and mitigate the discomforts of railroad traveling, in the directions which the great majority of the traveling public most appreciate. In these efforts it has been prompt to try a great variety of appliances, with little regard to their cost, its great aim being to make its cars more comfortable and attractive to the traveling public than any others in the world. And doubtless its efforts in this direction have had a great deal to do with the general improvement in passenger-car accommodations in this country within the past ten years. Not only has it set an example and cultivated a taste in the public for luxurious traveling accommodations, but it has done much to demonstrate what is practicable in the appliances by which increased comfort is sought—many of them in no respect peculiar to sleeping cars. And it has doubtless been well that there was one organization whose sole interest, almost, was in improving passenger transportation without much regard to the cost. It has demonstrated some things, generally applicable in passenger transportation, which would hardly have been tested otherwise.

The company's report, as we have said, gives no account of the routes over which it runs regular lines of cars, and we are unable to say whether there were any changes in them during the year. If there were any considerable ones, however, they would have been known, and we may assume that the earnings of the company in 1876-77 were from substantially the same lines as those worked during the greater part of the previous year. Down to November, 1875, however, one of the principal routes of the company was over the Michigan Central and Great Western railroads, and the withdrawal of its cars from these lines seemed likely to reduce its earnings materially. In fact, the earnings for the year ending July 31, 1876, for only one-fourth of which the Michigan Central route was worked, showed a decrease of but \$33,200 from those of the previous year. The later year, however, included about three months of the Centennial season—the part of it, however, when there was the least increase in travel.

A large increase in earnings doubtless resulted during the other half of the Centennial season, when most of the time the sleeping-car traffic, like other passenger traffic, on some lines was limited only by the number of cars available. The sleeping-car companies, moreover, did not suffer as the railroad companies did from a reduction in rates. Sleeping-car rates have always been fully maintained, we believe, and the companies are positively benefited by excessively low passage rates on their routes, as these rates increase travel and so bring them customers. But however great the harvest during the three or four months of great activity in travel at the beginning of the Pullman Company's last fiscal year, the benefits of it seem to have been largely neutralized by the dullness of the following months—one of the duller periods for passenger business, we suppose, in the history of our railroads. At least the increase in earnings over 1875-76 was but \$46,000, or 2.3 per cent. The number of cars and the gross earnings of the company for the past three years have been reported as follows:

	1874-75	1875-76	1876-77.
No. of Cars.....	422	451	460
Earnings.....	\$2,022,630	\$1,989,439	\$2,035,671
Total income.....	2,558,647	2,555,011	2,570,639

The difference between "earnings" and "total income" above is chiefly the proportion of the earnings of other sleeping-car companies which the Pullman Company receives for working their lines, with small amounts received from patent royalties, etc. The income is indeed remarkably uniform, varying much less than would be supposed in a period when railroad earnings have fluctuated greatly.

The report indicates the company to be in an entirely flourishing condition. It does not, however, pay as large dividends as formerly. Down to July, 1875, the regular rate was 12 per cent.—3 per cent. quarterly. Since that time 2 per cent. quarterly has been paid, but a very large surplus is reported, a small part going to reduce the funded debt—which is small, but which a company of this kind would do well to avoid entirely—another portion to a sinking fund to provide for depreciation in the value of patents and franchises, but most of it to credit of income account, apparently invested in assets not charged to capital account. Thus the account shows now an excess of assets over liabilities amounting to \$3,236,000, and for every dollar of stock and debt the company estimates that it has \$1.42 worth of property, or property that has cost so much. Much of the capital is invested in the securities of other sleeping-car companies controlled by the Pullman Company, and whether this investment is profitable or not cannot be definitely ascertained from the report. But the whole enterprise is shown to have earned over all expenses and interest charges about 18½ per cent. on the capital stock. With such profits the company ought to be able to provide pretty

fully for future contingencies, such as the renewal of contracts with railroad companies on less favorable terms than the present ones. As time passes and patents expire it becomes more and more possible for other companies or the railroads themselves to provide facilities equal to those of the Pullman Company, and the fact that the latter was the pioneer, and largely the original designer and introducer of the appliances which its competitors offer, will not prevent the competition, and the railroad companies will none the less secure their sleeping-car service on the best terms offered. This makes it reasonable to expect that in the long run this company will not be able to make extraordinary profits on the capital invested in its business.

This seems to be the general view of the company's prospects. Though paying 8 per cent. dividends steadily, and reporting more than twice as much earned, its stock sells at about 80, while 8 per cent. railroad stocks are almost universally above par. The fact that the dividends have been reduced from 12 to 8 per cent. may have had the effect of forcing the stock below its real value, by causing the impression that the company's business is declining. But against that we have had reports of three years of remarkably steady earnings, while the stock is held so largely by those who ought to know the prospects of renewing the company's contracts that it is natural to suppose it will not be largely sold much below its real value.

## QUESTIONS WHICH SHOULD BE ASKED AND ANSWERED.

There seems to be a fair prospect that the question of civil service reform will be made one of the leading questions in our national politics during the next few years, and if public attention is once fairly attracted to it, it will very naturally follow that the principle underlying it will be applied to what may be called the civil service of railroads. This principle may be stated generally to be that men shall be selected for the performance of certain duties on account of their fitness and ability alone, which it is hardly necessary to say is not the principle in this country which usually determines the appointment of officers of State and often does not control the selection of railroad officers. It must, however, be granted, as was written by a wise man, that "in the choice of an agent it is not sufficient to ascertain what a man knows, or to make a catalogue of his qualities; but you have to find out how he will perform a particular service." While it is true that what a man knows may not alone be a sufficient test of his capacity for performing certain duties, nevertheless there can be no doubt that at the present time there is often an immense amount of waste and loss in the management of the machinery departments of railroads growing out of the ignorance of things relating thereto, which those in charge could readily acquire from books or reading current engineering literature. Thus the delusion that friction is increased by enlarging the surfaces in contact has probably cost railroads in this country many thousands if not millions of dollars. We know a master mechanic of a locomotive shop who proposed to increase the efficiency of a condensing engine by attaching a "button" to each side of the piston "so that the vacuum could take hold." Another genius—a civil engineer—proposed a "tapered screw" for compressing cotton, so as to have a greater leverage towards the latter part of the operation. The kind of nut to be used was not described. A master car-builder on a road more than a hundred miles in length insisted to the writer that he could pull a much heavier load up an incline with big wheels under his cars than he could with small ones, because with the big ones "he had so much more leverage on the load" than he had with little ones. These blunders are of course very absurd, but there are others which though perhaps less ludicrous are much more costly. Perhaps it would be over-sanguine to expect it, and possibly it may not be desirable, but it may be that in the future before a person is permitted to occupy the position of master mechanic he will be obliged to have at least some of that kind of book knowledge to be ignorant of which is sure to prove costly to a railroad company, and that he may be called upon to give some evidence of his knowledge before he receives his appointment.

It is easy to imagine a number of very obvious questions which might be asked. Thus if the one already referred to, whether friction of journals is increased by enlarging the surfaces in contact, were propounded to all master mechanics and master car-builders, with the condition that those who answered wrong should lose their official heads, it is to be feared that there would be a large number of vacancies immediately thereafter. Master car-builders know perhaps better than any other persons how much expense is incurred in their departments by the great diversity in the form and proportions of the parts of cars. In order to bring about uniformity the first and most necessary step is to adopt some standard form and dimensions for the axles of cars. A move in that direction was made a few years ago, but one of the insurmountable difficulties in the way of securing unanimity was that so many car-builders at that time could not be convinced that the friction of journals was not increased



by enlarging the journals. In other words, ignorance of a simple well established mechanical principle stood in the way of an important reform in the construction of railroad cars. It might not be amiss, therefore, to inquire of the person in charge of the construction of cars whether any standard form and proportions for car-axles has been recommended, and if so, what they are.

Another pertinent question to ask of the same persons would be, whether any standard for the height of draw-bars has been agreed upon, and if so, what it is.

The evil of a diversity of screw-threads in the construction of all kinds of machinery, but especially in locomotives and cars, which require such frequent repair, has often been pointed out in these pages. Some years ago an effort was made by a number of the associations organized for the advancement of the art and science of mechanical engineering to introduce a uniform system of screw threads, and the Franklin Institute or Sellers system was recommended by three or four such associations, the Master Mechanics' and Master Car Builders' included. The insuperable difficulty in the way of its general introduction, however, has been that a large proportion of those whose business it is to see that such reforms are carried out are almost totally ignorant of the whole subject. It would nevertheless be quite in order to ask such persons whether any system of screw threads has been recommended, and if so what are the forms and proportions of the threads proposed.

The use of safety chains on car trucks has often been recommended in these pages; although considerable diversity of opinion exists among railroad men about their efficiency, in order to find precisely upon what ground they are either used or discarded, the following questions might elicit answers from the head of the car department which would indicate very clearly to his superior officer whether the cars on his line were or were not provided with all the most practicable appliances to guard against accidents. The questions are:

If a car truck gets off the rails and turns crosswise of the track, what will happen if the car is running at a high rate of speed?

What will happen if the truck is held in line with the rails by safety chains?

How much strain must such chains and their attachments be able to resist under ordinary circumstances to be able to hold a truck in line with the rails?

Doubtless if superintendents and managers of roads should ask these questions in good faith and request written replies, as the religious papers say it would redound to their edification and profit, and probably would make their trains safer to travel on.

Probably some men who pride themselves on being very "practical" would stumble a good deal if they were asked how much load an iron bar will carry safely if it will break at a strain of 50,000 lbs. Yet this is of all things a practical question, and one on which the safety of life and property may often depend.

Master mechanics are often much "mixed" about the question whether the steam required to fill the steam passages and the clearance spaces between the piston and cylinder heads at each stroke of the piston of ordinary locomotives is wasted. Much useless invention has been devoted to this subject on account of confused ideas concerning it.

We took occasion a short time ago to comment upon a bridge accident which occurred by leaving the bridge unfastened although it was closed. Since then we have heard of a somewhat amusing conversation which occurred between a railroad manager and an experienced mechanical engineer. The manager was lamenting that notwithstanding all the care which the officers of a company might exercise in the selection of signal and switch-men, the latter were nevertheless liable to make mistakes in giving signals or in opening or closing switches. The engineer tried to explain that so far as draw-bridges, junctions and switches were concerned, it was entirely practicable to supply a mechanism which would make it impossible for a signalman to give a wrong signal; that if a man should become confused or be intoxicated or wake up suddenly from sleep, the apparatus described would render it impossible for him to give a wrong signal, though he might cause unnecessary delay. The manager, who had no faith in "science," scoffed and expressed contempt for the idea, and could not be convinced that such mechanism was in constant use and had been for years. To him it appeared like sheer humbug, and his mental constitution did not admit of the belief of a matter which can be demonstrated with as much certainty as the *pons asinorum* in geometry. For the want of knowledge of the interlocking appliances which are now used so extensively in Europe nearly all travelers in this country are exposed to more danger than there is any good reason for. We might therefore ask this question of many railroad officers: How can a signalman at a draw-bridge, junction, crossing or switch be prevented from giving a wrong signal?

One of the circulars sent out by a committee of the Master Car-Builders' Association contained the question, "How may it be known whether the car department of a railroad is economically managed?" The writer had an opportunity of reading the replies, which were not many, but from which it was evident that very few if any of those who replied to it had any clear idea of a true basis of comparison or estimate.

The list of such questions might be very much increased, and by inquiries which, although usually classed and condemned as theoretical, are in fact in the highest degree practical. One, however, of a somewhat moral character, should, we fear, be asked very often. It might be worded somewhat as follows:

Is it anything morally wrong or dishonest for a railroad officer or employee to receive commissions or other personal benefits, for buying or recommending the purchase of materials or merchandise for the company by which he is employed?

#### The Michigan Central.

The Michigan Central report, only a portion of which has yet reached us, shows a continuance of the circumstances which have for several years deprived this company's stockholders of dividends, though traffic has constantly increased. The average rate per ton per mile for the last year was 21 per cent. lower than the average rate of the preceding year—itsself low without precedent on this road; and with a freight traffic about 20 per cent. greater, the freight earnings were 5½ per cent. less. Indeed, the freight earnings last year were but 1½ per cent. greater than in 1871-72, though the freight traffic was 80 per cent. greater. Of the total decrease of \$352,837 in earnings (5½ per cent.), \$258,388 was in freight earnings. There was a decrease of about \$112,000 (5½ per cent.) in passenger earnings also, notwithstanding that the year included nearly the whole Centennial travel, which was large over this road, as on other trunk lines. This is only additional evidence that but very few roads profited by the Centennial traffic. Many had a great deal of it, but it was all carried at low rates, and if there was an increase of earnings from Centennial traffic proper, on roads like the Michigan Central it was more than balanced by the extremely low rates on all other through traffic caused by the desperate railroad war of the Centennial year.

The average receipt per ton per mile last year is given as 0.88 cent on all freight, including that over the branch lines. This is, we believe, lower than has been reported before for any road in this country except the Philadelphia & Erie. There can be but the slightest margin for profit with such a rate, and as this is the average for the whole freight business, and the average for the through business must have been considerably less, we may conclude that the largest part of the through freight business was carried last year without profit.

It is a question, of course, how much of the gain in traffic has been caused by the reductions of rates. Last year, undoubtedly, a great deal of traffic was carried by rail which could not have been had if it had been charged the full cost of carrying it. But then if the low rate of the previous year had been collected, the freight earnings would have been \$1,200,000 greater; and the road could suffer a considerable diminution of traffic with advantage if a tolerably remunerative rate could be secured. A high rate is not needed, as it certainly cannot be had.

The net earnings of the company above interest and rentals were about \$400,000 during the last year. They were applied chiefly to reducing the floating debt. It requires about \$187,000 to pay 1 per cent. on the capital stock, and with the rates of 1.75 on the traffic of 1876 the additional earnings would have paid 6 per cent. Whether it will be practicable to secure the higher rate on so large a traffic only time can tell. There is now, however, every prospect that the average rate of the current year will be higher than that of the past year. Already the season when it is hardest to maintain rates is past, and since June rates have been maintained. According to present prospects, the next Michigan Central report will show a smaller amount of freight traffic than this last one, and a larger average rate. This may not increase the gross freight earnings, but it ought to increase freight profits.

#### Record of New Railroad Construction.

This number of the *Railroad Gazette* has information of the laying of track on new railroads as follows:

*Raleigh & Augusta Air Line*.—Extended southwest 12 miles, to Hamlet, N. C.

*New Orleans, Jackson & Northern*.—An extension has been built from the depot in New Orleans to the levee, about 2 miles.

*Cincinnati & Portsmouth*.—The first track is laid from Cincinnati, O., east to Mount Carmel, 11 miles. It is of 3 ft. gauge.

*Toledo & Delphos*.—Extended from Jennings, O., north by east to Dupont, 10 miles. It is of 3 ft. gauge.

*Union Railway, Transfer & Stock Yards*.—This company's road, generally called the *Indianapolis Belt*, has track laid from Brightwood around the east, south and west sides of Indianapolis to the Bloomington crossing, 10 miles.

*Chicago, Burlington & Quincy*.—The *Keithsburg Branch* is extended from Keithsburg, Ill., north to New Boston, 3 miles.

*Kansas Central*.—Extended from Holton, Kan., westward to Soldier Creek, 12 miles. It is of 3 ft. gauge.

*Southern Pacific*.—Extended across the Colorado River to Fort Yuma, 1 mile.

This is a total of 61 miles of new railroad, making 1,396 miles completed in the United States in 1877, against 1,677 miles reported for the corresponding period in 1876, 804 in 1875, 1,101 in 1874, 2,778 in 1873, and 4,970 in 1872.

STOCK EXCHANGE PRICES often seem to bear little relation to values, being unduly depressed and inflated by causes which have but a temporary effect. Last spring, for instance, prices went down to an unheard of extent because the prospects of the traffic of the current year were unfavorable; now, with great crops to move and a brisk traffic they have risen as if one year's prosperity were all that is necessary to insure good returns forever afterwards. A great many stocks are ten to twenty dollars a share higher now than they were last May, though the most that can be hoped from the changed circumstances is a dividend of five to seven dollars within a year. Doubtless many stocks were unduly depressed in the spring, but this is only additional evidence of the undue effect of temporary fluctuations in profits on the market prices of securities.

Probably investors last spring, however, began to fear that the difficulties of the time might be the last straw to break the camel's back, and that some at least of the stocks which had been long without dividends might become extinguished, and other dividend-paying stocks have the rate of dividend permanently reduced. Such investors, thinking then that times were likely to go on from bad to worse, would be greatly encouraged to find an interruption in the downward course, which at least proves that ruin is not inevitable, and indicates, indeed, that prosperity is quite possible without a violent revolution in the course of business.

THE NEW YORK FREIGHT APPORTIONMENT, which has been in operation since June last, has been discussed at sundry meetings of trunk-line managers recently, and there have been all sorts of rumors as to what would be done concerning it. By this scheme, as is known, the west-bound freight from New York to competitive points is divided among the trunk lines in the proportion of 33 per cent. to the New York Central & Hudson River, 33 to the Erie, 25 to the Pennsylvania, and 9 per cent. to the Baltimore & Ohio. It has been reported that one or more lines have become dissatisfied with these proportions, a great deal more having been brought to their stations which had to be transferred to other companies to maintain their proportions. And again it has been said that these claims for larger proportions were withdrawn at a recent meeting. We believe that so far nothing has been actually done, but a meeting was to be held on Thursday, the 4th inst., after we go to press, which may take some action. We should say, however, that it is entirely improbable that the combination will be broken up; it has been of immense advantage to the parties to it so far, and may continue to be so; though of course it is not necessary that the business be divided in just the same proportions as heretofore, if the companies can agree upon others.

A COSTLY RAILROAD will be the extension of the Metropolitan District line in London—a section one mile and sixteen rods long, known as the "inner circle completion," as it will connect the Metropolitan and the Metropolitan District roads (both underground lines) at their eastern ends, and make it possible to run trains entirely around the ellipse formed by the two roads, which at present are connected only at their western ends. This link is estimated to cost £2,100,000, or at the rate of about \$10,000,000 per mile. The city will, however, allow \$2,500,000 for a new street which has to be constructed in connection with the work, which is to be done by Aug. 7, 1879. Costly as this work is, however, we have something quite comparable to it in expense in this country in the great St. Louis Bridge, which, however, has but the merest fraction of the traffic which supports the London underground roads. This single mile of road will cost more than the entire system of elevated roads proposed for New York.

AN ENGLISH LOCOMOTIVE SUPERINTENDENT has been elected to Parliament. The directors of the company thereupon voted that this office was incompatible with his position in their service. Some of them, however, it seems, thought that he could attend to the duties of both positions at once, and among them was Sir Edward Watkin, chairman of the company and of the Erie reorganization committee, himself a member of Parliament and a relative of the Locomotive Superintendent in question. Moreover, he was so offended at the action of the majority of the board that he resigned his chairmanship. We know of but one similar instance in this country. Mr. John Reilly, Master of Transportation of the Pennsylvania Railroad, was elected a member of the last Congress. Before he took his seat, however, he resigned his position on the railroad, to which he was re-appointed when he had served out his term.

THE LOWEST PRICES FOR STEEL RAILS are those bid at the letting of a contract in Belgium Sept. 5. About 3,000 tons were wanted, and the lowest bid for the contract was a price equivalent to \$28.32 at the works in Germany (Ruhrort), being about \$30 delivered at Malines in Belgium. The lowest price bid by a Belgian works was \$33. At the same time bids were received for the iron substructure of 30 miles of road of the Hill system (substitute for wooden ties), and the lowest bid of \$27.16 per ton was nearly five dollars a ton lower than the price asked by the same works a year ago for a similar quantity of the same materials. By the way, the quantity required for this substructure was 96 tons per mile.

THE IRON PRODUCTION PER INHABITANT in 1876 was, according to the report of the British Iron and Steel Institute, 425½ lbs. in Great Britain, 225 in Belgium, 177 in Sweden, 121 in the United States, 107½ in Germany, 96 in France, 31 in Austria, and 13½ in Russia. The total European production appears to have been about 100 lbs. per head, but a considerable part of this production was consumed elsewhere than in Europe. On the other hand, this country consumes a little more than it produces, so that our average consumption would appear to be considerably greater than that of Europe—which is altogether probable.



**AUSTRIAN GRAIN TRAFFIC** is now in some degree comparable to that of our busiest Northwestern railroads, one of the roads now having "a number" of special grain trains running, each with 45 cars, which is the largest number permitted. One such train will carry 16,500 bushels of wheat, but the traffic seems to be conducted in what we should consider a primitive manner, the grain being all in bags, and there are great complaints of the delays caused by failure to return the bags promptly. "Bulk grain" and elevators seem to be unknown there, although grain-growing is the chief business of a large part of the country.

**THE AUSTRIAN RAILROAD CLUB**, which has its quarters in Vienna, informs us, through its President and Secretary, that it will always be hospitable to American railroad men who may happen to be in that city.

## General Railroad News.

### ELECTIONS AND APPOINTMENTS.

**Allegheny, Kennerdell & Clintonville.**—Mr. O. M. Hartzell has been appointed Superintendent. He has been for some time in the general freight office of the Allegheny Valley road.

**Alamoosa.**—The first board of directors is as follows: W. A. Bell, Manitou, Col.; W. J. Palmer, Charles B. Lamborn, John Pratt, H. A. Risley, Colorado Springs, Col.

**Foster Brook.**—This company has been organized with the following directors: M. N. Allen, F. G. Babcock, Lucius Beaumont, S. H. Bradley, E. W. Coddington, C. H. Foster, George Gillmor, T. L. Higgins, W. H. Johnson, Roy Stone, A. J. Wilcox. The board elected A. J. Wilcox President; M. N. Allen, Secretary and Treasurer.

**Master Car Painters' Association.**—At the annual convention in Albany, N. Y., Sept. 19, the following officers were chosen: President, S. E. Kirkpatrick, Central Vermont, St. Albans, Vt.; Vice-President, George Forby, Missouri Pacific, St. Louis; Secretary and Treasurer, Robert McKeon, Atlantic & Great Western, Kent, O. Mr. McKeon has served for several years very acceptably.

**Michigan Central.**—Mr. J. Q. A. Bean has been appointed General Eastern Agent, with office in New York. Mr. Bean was lately General Freight Agent, and resigned on account of ill health.

**Montreal, Portland & Boston.**—The board has elected E. H. Goff President and General Manager, in place of Thomas Ryan; also C. D. Smith and S. T. Willett directors, in place of Thomas Ryan and J. C. Hatton, resigned.

**Northern Pacific.**—At the annual meeting in New York, Sept. 26, the following directors were chosen: John M. Denison, Baltimore; Richard L. Ashurst, Joseph Dilworth, J. Frailley Smith, Charlesmagne Tower, Charles B. Wright, Philadelphia; George W. Cass, Johnston Livingston, New York; Benjamin P. Cheney, Boston; George Stark, Nashua, N. H.; Frederick Billings, Woodstock, Vt.; Alexander Mitchell, Milwaukee, Wis.; J. C. Ainsworth, Portland, Oregon. The only new director is Mr. Ainsworth, who replaces Alfred E. Tilton. The board subsequently met and re-elected Charles B. Wright President; George Stark, Vice-President; Samuel Wilkeson, Secretary; George E. Beebe, Treasurer.

**Sedalia, Warsaw & Memphis.**—The board has elected the following officers of this new company: President, Wm. Gentry; Vice-President, George R. Smith; Secretary, James H. Lay; Treasurer, Cyrus Newkirk. The office is at Sedalia, Mo.

**Western Maryland.**—The Mayor of Baltimore has nominated and the City Council has confirmed the following city directors in this company: Samuel H. Adams, Christian Devries, Daniel J. Foley, E. G. Hipaley, Nicholas G. Penniman, J. Alexander Preston, Alexander Rieman, William Seemuller.

### PERSONAL.

—Mr. E. P. Hannaford, Chief Engineer of the Grand Trunk Railway, has returned to Montreal after a two months' absence in Europe.

—Mr. E. S. Wills, General Freight and Ticket Agent of the Central Branch, Union Pacific, was married in Atchison, Kan., last week, to Mrs. Anna T. Isbell. The officers of the road contributed a handsome silver tea set as a wedding present.

—The reception tendered to Superintendent G. W. Barker of the New York Division, Pennsylvania Railroad, in recognition of his services in preventing a strike on that company's New Jersey lines, was held in Jersey City, Sept. 27. A large company was present, including United States Senator McPherson, Mayor Seidler and many other prominent citizens of Jersey City. A number of speeches were made and Mr. Barker was presented with a handsome pair of candelabra and a clock in oxidized silver and porphyry and also a set of diamond studs. Mr. Barker acknowledged the compliments paid him in fitting terms, and the reception passed off very pleasantly.

—Col. T. S. Williams, formerly for several years Superintendent of the New Orleans, Jackson & Great Northern road, but for several years past in the service of the Government of Costa Rica in connection with the Costa Rica Railroad, has returned to his old home in New Orleans.

—Gen. E. W. Ensign, of Buffalo, N. Y., a well-known contractor, died suddenly of apoplexy at Cleveland, O., Oct. 1. He built many of the stone bridges on the Lake Shore road, and at the time of his death had contracts for the masonry of the new bridge at Toledo on that road, and for the masonry of the viaduct at Cleveland.

—Mr. John A. B. Campbell, an old citizen of Buffalo, N. Y., and one of the original directors of the Buffalo & Washington (now Buffalo, New York & Philadelphia) and the Buffalo & Jamestown roads, died in that city Oct. 1.

### TRAFFIC AND EARNINGS.

#### Grain Movement.

Receipts and shipments of grain of all kinds for the week ending Sept. 22 were, in bushels:

	1877.	1876.	Increase.	P. c.
Lake ports receipts.....	6,555,480	4,360,091	2,195,389	52.6
"    shipments.....	5,040,528	4,089,315	951,213	23.3
Atlantic ports receipts.....	4,515,770	3,294,870	1,220,900	39.6

Of the lake ports shipments, 21½ per cent. went by rail this year, against 44½ in 1876, 37½ in 1875, and 13½ in 1874.

Of the receipts at Atlantic ports, 55.5 per cent. arrived at New York, 14.2 at Montreal, 9.8 at Baltimore, 9.0 at Boston, 8.8 at Philadelphia, 1.9 at New Orleans, and 0.8 at Portland.

Buffalo grain receipts for the nine months ending Sept. 30 are reported as follows by the *Commercial Advertiser* of that city:

	1877.	1876.	1877.	1876.
By lake.....	404,095	614,351	37,620,512	31,394,386
By rail.....	759,600	863,000	10,348,440	10,411,100
Totals.....	1,163,695	1,377,351	47,979,252	41,805,486

There was an increase of 6,173,766 bushels, or 14.8 per cent.,

in grain, and a decrease of 213,656 barrels, or 15.5 per cent., in flour. The rail receipts this year were 65.3 per cent. of the flour, and 21.6 per cent. of the grain. Shipments eastward of grain received by rail for the same period were:

	1877.	1876.	Inc. or Dec.	P. c.
By rail, bushels.....	6,124,389	10,204,875	Dec. 4,080,486	40.9
By canal.....	32,466,970	19,725,243	Inc. 12,741,727	64.6
Totals.....	38,591,359	29,930,118	Inc. 8,661,241	28.9

The rail shipments were 15.9 per cent. of the total this year, and 34.1 per cent. last year. The canal opened May 8 in 1877, and May 4 in 1876.

Baltimore grain receipts for September were as follows, flour in barrels and grain in bushels, flour being reduced to wheat in the totals:

	1877.	1876.	Inc. or Dec.	P. c.
Flour.....	121,263	139,867	Dec. 18,604	13.3
Wheat.....	1,187,472	755,267	Inc. 432,205	113.8
Corn.....	927,189	1,954,831	Dec. 1,027,642	52.6
Other grain.....	83,918	83,196	Inc. 722	0.9
Totals.....	2,204,849	3,292,629	Dec. 487,780	14.8

For the nine months ending Sept. 30 the receipts were:

	1877.	1876.	Decrease.	P. c.
Flour.....	794,088	942,601	148,513	15.8
Grain of all kinds.....	21,207,792	23,060,572	1,852,780	11.3
Totals.....	22,001,880	24,003,173	2,001,293	9.1

Exports of flour for September were 35,262 barrels. The stock of grain in elevator at the close of the month was light.

Receipts of all grains at Chicago for the month of September were:

	1877.	1876.	Increase.	P. c.
Receipts.....	12,304,249	10,379,232	1,925,017	18.5
The receipts of wheat at Chicago and Milwaukee for September were:				

	1877.	1876.	Increase.	P. c.
Chicago.....	3,127,777	2,325,044	1,802,733	136.0
Milwaukee.....	5,180,433	1,160,892	4,019,541	346.6

The wheat traffic is still much smaller than the corn at Chicago. Milwaukee usually has the heavier wheat movement when there are good crops in Wisconsin and Minnesota, but its other grain business is not important.

Chicago receipts and shipments for the week ending Sept. 29, were:

	1877.	1876.	Inc. or Dec.	P. c.
Receipts.....	3,395,061	3,560,582	Dec. 165,521	4.4
Shipments.....	2,859,354	2,313,357	Inc. 545,997	23.6

The decrease in receipts is in spite of the fact that they were unusually large. Last year the receipts of the last week of September were half as great as those of the previous three weeks.

#### Railroad Earnings.

Earnings for various periods are reported as follows:

Year ending May 31:

	1876-77.	1875-76.	Inc. or Dec.	P. c.
Michigan Central.....	\$6,498,126	\$6,850,964	Dec. 352,838	5.2
Expenses.....	4,706,442	4,802,902	Dec. 96,460	2.0
Net earnings.....	\$1,791,684	\$2,048,062	Dec. 256,378	12.5
Earnings per mile.....	8,085	8,524	Dec. 439	5.2
Per cent. of exps.....	72.43	70.11	Inc. 2.32	3.3

Year ending Aug. 31:

	1876-77.	1875-76.	Inc. or Dec.	P. c.
Northern Pacific.....	\$905,823	\$78,125	Inc. 827,698	1060.0
Expenses.....	578,125	1,747	Inc. 576,378	330.0
Net earnings.....	327,698	1,747	Inc. 325,951	186.0
Earnings per mile.....	1,747	1,747	Inc. 0	0.0
Per cent. of exps.....	69.34	69.34	Inc. 0	0.0

Eight months ending Aug. 31:

	1877.	1876.	Inc. or Dec.	P. c.
Atchison, Topeka & Santa Fe.....	\$1,479,385	\$1,492,792	Dec. 13,407	0.9
Net earnings.....	664,066	734,755	Dec. 70,689	9.6
Per cent. of exps.....	55.11	50.78	Inc. 4.33	8.5
Kansas Pacific.....	1,925,249	1,852,862	Inc. 72,387	3.9
Philadelphia & Erie.....	1,845,754	2,039,841	Dec. 244,087	11.7
Net earnings.....	501,220	567,219	Dec. 65,999	11.6
Per cent. of exps.....	72.83	72.83	Inc. 0	0.0
St. Joseph & Western.....	259,442	243,401	Inc. 16,041	6.6

Month of August:

	1877.	1876.	Inc. or Dec.	P. c.
Intercolonial.....	\$123,497	\$100,758	Inc. 22,739	22.6
Kansas Pacific.....	304,842	254,783	Inc. 50,059	19.6
Philadelphia & Erie.....	292,390	267,834	Inc. 24,556	9.2
Net earnings.....	112,083	80,699	Inc. 31,384	38.9
Per cent. of exps.....	61.66	69.88	Dec. 8.22	11.8
St. Joseph & Western.....	53,194	43,963	Inc. 9,231	21.0
St. Paul & Sioux City.....	30,170	44,241	Dec. 14,071	31.8
Sioux City & St. Paul.....	24,022	26,066	Dec. 2,044	7.8

Third week in September:

	1877.	1876.	Inc. or Dec.	P. c.
Atchison, Topeka & Santa Fe.....	\$67,442	\$70,563	Dec. 3,121	4.4
Denver & Rio Grande.....	19,483	19,483	Inc. 0	0.0
Missouri, Kan. & Tex.....	68,152	76,068	Dec. 7,916	10.4
St. Louis, Iron Mt. & Southern.....	118,600	88,794	Inc. 29,806	33.6

Week ending Sept. 14:

	1877.	1876.	Inc. or Dec.	P. c.
Great Western, of Canada.....	\$80,247	\$85,243	Dec. 4,996	5.9

Week ending Sept. 21:

	1877.	1876.	Inc. or Dec.	P. c.
Great Western, of Canada.....	\$66,980	\$98,592	Dec. 31,612	11.8

Month of September:

	1877.	1876.	Inc. or Dec.	P. c.
Chicago, Milwaukee & St. Paul.....	\$1,180,000	\$645,831	Inc. 534,169	82.7
Chicago & Northw. n.....	1,540,000	1,182,000	Inc. 358,000	30.3

#### Norfolk Cotton Traffic.

Cotton receipts at Norfolk, Va., for September were, in bales:

	1877.	1876.	Decrease.	P. c.
Atlantic, Mississippi & Ohio R. R.....	2,669	5,944	3,275	54.3
Seaboard & Roanoke R. R.....	2,438	17,111	14,673	85.8
Canal and otherwise.....	104	1,266	1,162	91.7
Totals.....	5,211	24,321	19,110	78.6

Canal receipts include both the Dismal Swamp and the Albemarle & Chesapeake canals.

#### Water Rates.

There has been an advance in lake rates again, the quotations at the close of last week and Tuesday being generally 4½ cents a bushel for wheat, 4½ for corn and 3½ for oats from Chicago or Milwaukee to Buffalo, while Tuesday the rates are reported ½ cent higher. Canal rates have been absolutely stationary for about three weeks—8 cents for wheat, 7 for corn and 4½ for oats from Buffalo to New York. Lake-and-rail rates from Chicago to New York were reported Tuesday at 17 cents a bushel for wheat, 15½ for corn and 10 cents for oats. The all-rail rate is, as it has been since Sept. 1, 21 cents for wheat, 19½ for corn and 11½ for oats.

Ocean rates Tuesday were: 8½d. to 9d. per bushel from New York to Liverpool by steam; 40s. per ton for bacon; 50s. per ton for cheese; grain by sail from New York to Cork for orders, 6s. 9d. to 7s. 2d.

#### Coal Movement.

Coal tonnages for the week ending Sept. 22 are reported as follows:

	1877.	1876.	Inc. or Dec.	P. c.
Anthracite.....	348,091	500,567	Dec. 152,476	30.5
Semi-bituminous.....	80,326	36,166	Inc. 44,160	122.8
Bituminous, Pennsylvania.....	43,667	43,667	Dec. 0	0.0

The Cumberland shipments are just now very large, the region being apparently worked to nearly its full capacity. In the anthracite region the Lehigh & Wilkesbarre Company's miners have agreed to resume at a 10 per cent. advance; that company has made a general cut in prices at tide-water, to meet the competition of the Reading.

The anthracite coal tonnage of the Belvidere Division, Pennsylvania Railroad, for the nine months ending Sept. 29, was as follows:

	1877.	1876.	Inc. or Dec.	P. c.
To Coal Port for shipment.....	12,748	194,505	Dec. 181,757	93.4
To South Amboy for shipment.....	415,360	321,621	Inc. 93,739	29.1
Local distribution on New Jersey lines.....	135,321	116,855	Inc. 18,466	15.8
Company's use on New Jersey lines.....	52,137	49,508	Inc. 2,629	5.3
Totals.....	615,566	682,489	Dec. 66,923	9.7

Of the total this year 472,955 tons were from the Lehigh, and 142,611 tons from the Wyoming region.

#### Erie Canal Traffic.

The business of the Erie Canal at Buffalo for the period from the opening up to Sept. 30 was as follows:

	1877.	1876.	Inc. or Dec.	P. c.
Boats cleared.....	4,570	3,454	Inc. 1,116	32.3
Tolls received.....	\$309,027 09	\$415,780 74	Dec. \$106,753 65	25.7

The canal opened May 8 in 1877, and May 4 in 1876.

### THE SCRAP HEAP.

#### Railroad Manufactures.

The Indianapolis Rolling Mill is re-rolling a large lot of iron rails for the Indianapolis, Peru & Chicago road, and has a lot to re-roll for the Indianapolis, Bloomington & Western.

The car works of Haskell & Barker, at Michigan City, Ind., are building 50 flat and 50 coal cars for the Indianapolis, Peru & Chicago road.

The Chicago & Lake Huron road has leased a large number of box cars from the United States Rolling Stock Co.

Mr. David B. James, of Visalia, Cal., has invented and patented a locomotive for use on one-rail roads. The weight of the engine is carried on two large wheels bearing on top of the rail, and there is a system of lateral wheels to keep the engine upright and steady. Only one of the bearing wheels is a driving wheel.

The Winslow Car Roofing Co., at Cleveland, O., has received orders for 600 roofs since Sept. 1.

The Leighton Bridge & Iron Works, at Rochester, N. Y., have recently received contracts for the Columbus avenue bridge and the Chelsea draw-bridge for the city of Boston; nine spans of bridge for the Chicago & Northwestern; the roof of the new Music Hall at Cincinnati, and the iron work for the dome of the new court house at Peoria, Ill. They have also secured a contract for a double-track bridge over the Merrimack River at Lawrence, Mass., for the Boston & Lowell road, although their bid (\$78,000) was not the lowest, the company preferring their plan.

The Consolidated Gas Co., of Pittsburgh recently placed a contract for cast-iron pipes with a firm in Philadelphia, the price being \$31.75 per ton delivered in Pittsburgh. The lowest Pittsburgh offer was \$35 per ton.

The Troy Times says of the Albany & Rensselaer Co.'s works: "Work was resumed at Corning's steam mill at the iron works, Monday morning, but the Bessemer steel works and Rensselaer rail mill have been shut down again, the former owing to a scarcity of material, and the latter for the purpose of making extensive repairs. About 500 men are consequently thrown out of employment, but the cessation of work will probably be only temporary."

H. S. Hopkins & Co., of St. Louis, have the contract for the masonry and superstructure for a Howe truss bridge, 150 feet long, on the Little Rock & Fort Smith road, and have just sent a party of masons and quarrymen to the bridge site to begin operations.

S. C. Forsaith & Co., at Manchester, N. H., general machinists and machine dealers, report business somewhat improved, there being more call for machine tools, especially throughout the West and South. They are making many shipments of lathes, planers, drill-presses, power lammers, and drop presses, also of general wood-working machinery, engines and boilers.

The Danforth Locomotive Works, at Paterson, N. J., have an order from an Oregon road and are also building the machinery for a cotton factory in Quito, Peru.

The Lowell Wrench Co., at Worcester, Mass., has designed and is manufacturing a new rail-drilling machine, which is attached by a clamp to the top of the rail. The New York agents are H. S. Manning & Co.

The Pratt & Whitney Co., at Hartford, Conn., have orders on hand for about \$100,000 of machinery. Of this \$30,000 worth is machinery for finishing gun parts and making cartridges, and is to go to Europe; \$30,000 more are in machinery for cutting screw-threads of the United States standard, Sharpe's V and Whitworth forms, which will be distributed through the United States, Great Britain and its colonies; the remaining \$40,000 is in orders for general machinery from different parts of the United States.

The Trenton (N. J.) Iron Co. has exceeded the large product of wire rods noted last week by 3,557 pounds, its new rod train having turned out on Sept. 27, in nine hours, 43,432



ment from America has been fitted up, and is now running on the lines. It has been stated in certain quarters that these engines were capable of drawing heavy trains up inclines, and those persons who seem to be adverse to the American invention have made a great deal of capital out of some slight mishap on the Colac line on the day of the opening celebration there, which has been fully and satisfactorily accounted for by the officers. The engine has since been employed on the Murray line, and has been attached to several unusually heavy goods trains. These practical tests of the capabilities of the engine have shown that it possesses all the advantages and powers claimed for it by the maker.

Private advices received state that the "slight mishap" referred to was a hot box under the tender.

#### An Early Riser.

A correspondent tells the following story of a well-known railroad officer, whose headquarters are not 1,000 miles from Pittsburgh: "His private secretary found it necessary to leave home for a few days on business, and it was arranged that a young man should take his place in Mr. —'s office during his absence. The secretary having a kindly feeling for the young man, suggested that he had better be on hand early each morning, as his lord and master was an early riser. Our friend (who had been in the habit of going to his office about 8 a. m.) made an extra effort and appeared at 7 o'clock, ready to discharge his duties. Judge of his surprise on finding that Mr. — was there before him, had already finished his mail, read the morning papers and was about lighting his second cigar.

"Well, young man," said Mr. —, "I'd like to know where you have been spending the forenoon?"

#### Automatic Signals as a Substitute for Steam Whistles.

The last report of the Massachusetts Railroad Commission, speaking of the complaints as to the use of the steam whistle, says:

"The matter will, therefore, almost inevitably, continue to be a subject of public discussion and complaint for some time to come. Meanwhile, so far as the most fruitful source of complaint is concerned, the use of the whistle as a signal of the approach of locomotives to stations or crossings, no justification whatever for its continuance in crowded localities any longer exists. The electric bell in stations and in the cabins of signal men at grade-crossings, answers every purpose much better than the whistle. If corporations, for reasons of excessive conservatism or economy, do not see fit to adopt such a perfectly established appliance as this, that is their affair. Meanwhile, they are not entitled to rouse and disturb whole communities because their officials dislike improved appliances or object to all expenditures which can possibly be avoided. Should further complaints, therefore, be made to this board of annoyance from this particular use of the whistle, the matter will not again be brought to the attention of the officers of the corporation implicated, but it will be referred to the Attorney General at once, with a view to such legal proceedings as shall in this matter, once for all, establish the rights and obligations of all concerned."

#### A New Kind of Perishable Freight.

One day last week some of the Atlantic & Great Western Railroad employees reported to Jesse Fosdick that a car on one of the switches was "melling bad, indicating that it was loaded with meat or some perishable article which needed attention. Mr. Fosdick told them to force the lock, open the door and see what was needed. They went back to the car and after a good deal of difficulty, greatly increased by the use of one hand in holding the nose to keep out the insupportable stench, the door was opened, and the car was found to be loaded with broom handles.—*Hornellville Times.*

#### Early Railroads in Iowa.

Mr. John Shea, Roadmaster of the Keokuk & Des Moines road, writes as follows to the *Eddyville Advertiser*:

"The first rail laid in Iowa was near high water mark on the bank of the Mississippi, nearly opposite the island of Rock Island, in the city of Davenport. This rail was laid in the month of May, 1854. The road at that time was called the Mississippi & Missouri road, and was laid that year to Iowa City, 54½ miles. Iowa City was then the capital of the State.

"The first rail laid on the Keokuk & Fort Des Moines & Minnesota Railroad—now called the Keokuk & Des Moines Railway—was laid a little west of the present machine shops in the city of Keokuk, on the 9th day of September, 1856—nearly twenty-one years ago.

"The first locomotive in Iowa was landed at Davenport in July, 1854.

"The first locomotive on the Keokuk & Des Moines Railway arrived from Quincy by barge in the month of October, 1856.

"The writer of this was present and assisted at the openings of both these roads, and consequently claims to be the pioneer railroad man in the State—being 23 years at the business in Iowa.

"The 'Antonia LeClare' was the first locomotive in the State. She was named after Mr. LeClare, of Davenport, a rich half-breed, residing there at the time.

"The first locomotives on the Keokuk & Des Moines Railway were the 'Keokuk' and the 'Des Moines'—both locomotives came together. They were called after the cities of Keokuk and Des Moines."

#### The Rockville Bridge.

A number of officers of the Pennsylvania Railroad and engineers last week inspected the work now completed on this bridge. The bridge replaces the Howe truss bridge over the Susquehanna at Rockville, five miles from Harrisburg, on the Pennsylvania road; it is 3,670 feet between abutments, having 21 spans of 160 feet each, and two of 155 feet each. The contract for the new bridge was let in June last to the Delaware Bridge Co., of New York, of which Mr. Charles Macdonald is President, and the work is required by the contract to be completed by Dec. 1, but already 14 spans are in place and it is expected that the bridge will be completed at least ten days before the contract time. The new bridge is for a double track, and the spans have to be erected without interfering with the traffic over the old bridge. The new trusses are erected outside of the old ones, and when completed the track is transferred to the new supports and the old wooden trusses taken down. The 14 spans now in place have all been erected since Aug. 1, when the first of the material was delivered at the bridge.

As already mentioned, the Delaware Bridge Co. is contractor for the work, and all the erecting work is done by it; the fitting, forging, etc., is done at the Edgemoor Iron Works, near Wilmington, Del., and the iron is supplied by the Pencoyd, Trenton and Catawagus rolling mills. The bridge is a wrought-iron truss, with pin connections throughout.

#### Steam Street Cars.

A separate motor engine has been placed on the Mount Auburn street road in Cincinnati, and is employed on the section between the head of the Main street inclined plane and the Zoological Garden.

A steam street car, built by the Danforth Locomotive Works on a plan patented by Mr. R. Cruzabaur, has been tried on a line in Paterson and worked there very successfully. The engine is under the car, with the boiler at one end.

#### A Vacuum Brake Sound Attachment

A contrivance which is now being tried on the Boston & Albany road to prevent the sharp, unpleasant sound caused by the steam jet of the vacuum brake is thus described: "A drum, 11 inches high, fits by two connecting nozzles to the

vent pipes. Two perforated plates are between the nozzles and the vent pipes, and a second pair at the junction of the drum and nozzles. The drum contains a big ball of wire, with two more perforated plates at the top, and a third, with larger holes, is screwed on top. This arrangement so divides the steam, without impeding its progress, as to almost completely prevent all noise. The cost is \$30, and six are now in successful operation on the road, while an application for a patent is pending."

The contrivance is the invention of Mr. J. McGowan, a brakeman on the road. The noise of the steam jet has frequently been urged as an objection to the vacuum brake, especially to its use near stations, where it might frighten horses.

#### The Hickey Steam-Brake.

The *National Car-Builder* says: "A new steam-brake for locomotive driver and tender wheels has been in operation on the Sheboygan & Fond du Lac Railroad for the last six months with the best results. It is the invention of Mr. John Hickey, the Master Mechanic of the road, and can be applied with equal advantage to both freight and passenger trains. The upright steam cylinder by which the power is applied is placed under the foot-board behind the crank-pin of the rear driving-wheels, and by means of a system of levers and equalizers, the brakes are applied equally to the four drivers, and simultaneously to the tender wheels—in the case of passenger trains—doing more and better work than two hand-brakemen. The steam is admitted to bottom of cylinders by a three-way cock in cab controlled by the engineer, and being close to fire-box there is little condensation. No springs are used for release of brakes, the weight of piston, and gravitation of brake-shoes, being sufficient for the purpose. The forgings are all straight work, there is no interference with the other machinery of engine or tender, and the entire cost of fitting for both does not exceed \$70. Mr. Hickey has also devised a plan for dispensing with brake-hickeys."

#### Oil Pipe Lines.

The total length of pipe used for transporting petroleum in the oil regions of Pennsylvania is reported to be 2,081½ miles, from 2 in. to 6 in. in diameter.

#### Prices.

There is greater activity in the market for iron, without increase in prices, quotations for pig remaining \$18 to \$19 for No. 1 foundry, \$17 to \$18 for No. 2 foundry, and \$16 to \$17 for forge. As to rails, the *Engineering and Mining Journal* says: "We are reported sales of steel rails aggregating 1,250 tons on private terms. There is a fair inquiry for immediate delivery, while there is reported to be a strong demand for next year's delivery at present prices. Makers, however, are not inclined to sell ahead at present prices. We quote iron-rails at mills at \$33 to \$38, and steel at \$42 to \$45."

#### British Rail Exports.

The exports of railroad iron of all kinds for the eight months ending with August were, in tons:

	1877.	1876.	Increase.	P. c.
To United States.....	2,514	160	2,354	1,470.0
To all countries.....	323,628	274,293	49,395	18.0

The exports to this country this year were sufficient to lay 29 miles of railroad with 56 lbs. rails. The total exports would suffice for 3,677 miles of such road. The average value of the August exports was £7 11s. 4d. this year against £8 7s. last year.

#### RAILROAD LAW.

##### Damages for Injury to Employees.

In Kelly against the Central Railroad & Banking Company, the Georgia Supreme Court held, as to the proof of injury:

"The presumption of law that the plaintiff, being an employee, is without fault, arises only when he is wholly disconnected with duties about the particular business in which he was hurt; when he is a party engaged in the duty of discharging which he is hurt, the onus is upon him to show himself without fault; so soon as he does that, the presumption arises that the other employees engaged with him in the duty were at fault or negligent, and the onus is shifted upon the company to show them without negligence; and this principle reconciles the cases decided by this court, when applied to the facts of each.

As to the measure of damages, the Court held as follows: "The damage is to be fixed by the jury, according to their opinion derived from facts testified to, such as the loss of the use of such a member of the body as the right hand, the diminution of ability in a laboring man to make a living after such loss, the pain and suffering caused by the wound, the bill of the physician and the expense of nursing, and all other facts and circumstances connected with the case; and this opinion of the jury should be influenced by the opinion of no witness, given in round numbers, of the amount of the damage, but made up from facts, when capable of proof, of actual damage, and of the enlightened conscientious belief of impartial jurors in respect to items incapable of exact proof, such as the feelings, the pain and suffering of the plaintiff, etc.

##### Company's Responsibility for Acts of its Employees.

In Gasway against the Atlanta & West Point Company, recently, the Georgia Supreme Court held as follows:

1. Railroad companies are responsible to passengers for the torts of the conductors and other servants of the company employed in running trains, when such torts are committed in connection with the business entrusted to such servants and spring from or grow immediately out of such business.

2. If the tortious act of the servant or agent be such, when committed in the business of the company and within the scope of the servant's employment, as would have subjected the servant to exemplary or vindictive damages had he been sued as principal, the company will be responsible for like damages when it is sued for such misconduct of its servant in its business.

3. The liability of the company extends to tortious acts of its servants done about its business, in checking the baggage of passengers at the several stations on its line of road, and to the platform or area along the cars necessary to be used or traversed by the passengers in attending to procuring seats and checking baggage, and other lawful and peaceful acts in connection with their travel.

4. These principles are especially applicable where the servants of the company are retained after the tort, and thereby their acts are impliedly ratified by the higher agents of the corporation.

##### Liability of Carrier Who Delivers Goods Without Proper Authority.

The *New York Register* says: "In the case of the Southern Express Company against Dickinson, the Supreme Court of the United States determined an interesting question in reference to the right of a consignor to hold a company responsible for delivering goods belonging to him to the consignee, at a place other than that to which they were consigned. It seems that the plaintiff had bought some cases of tobacco, and the vendors at Greensboro, N. C., delivered them to the express company and took the company's receipt, specifying that the goods belonged to the plaintiff, and that they were to be delivered to the vendors as consignees, at Columbia, S. C. This receipt the vendors sent to the plaintiff. The vendors, or one of them, afterward assumed wrongfully to sell the goods to a third person, and the latter thereupon obtained a re-delivery of them from the company at the place where they had been

shipped, and without the surrender of the receipt. Plaintiff claimed to recover the value from the company, on the ground of their failure to keep safely and make proper delivery of the goods. For the plaintiff it was insisted that the carrier was bound to deliver at the place to which the goods were directed, and that their delivery to a third person at another point could only be justified by proving the title of such person; and that so long as the bill of lading or receipt remained in the plaintiff's hands, the company were not authorized to make such a delivery. For the company it was insisted that the rights of a consignee are not terminal alone, but the bill of lading entitled them to receive the goods at any point where they might demand them. The Court held that it being found as a fact in this case that the goods did not belong to the consignees but to the shipper, and that this was known to the shipper, the carrier must be understood to have contracted with the shipper only for his interest, and the consignees were to be regarded simply as agents selected by him to receive the goods at the place indicated, and consequently the company were liable."

##### Liability of Carrier for Valuable Packages.

In the case of Little against the Boston & Maine Company, the Supreme Court of Maine had under consideration the much mooted question of the liability of a carrier for a valuable package received by him in ignorance of its contents. The plaintiff, an express company, received the package from a connecting express company, and paid their charges of forty cents, the trifling amount of which seemed to indicate that the box contained goods of ordinary value only. The contents were unknown to the plaintiff. They delivered the box to the railroad company, the defendants, to carry as freight from Boston to Lewiston; the defendants made no inquiry, and the plaintiffs made no communication as to the value. Defendants charged thirty cents for transportation, but their rate would have been \$2.50 had they known the actual value. It was held that the carrier has a right to inquire as to the value, and the owner is bound to answer truly, but in this case the carrier having made no inquiry and no special acceptance of the goods, they were liable for the loss, notwithstanding their ignorance of the value.—*New York Register.*

##### Railroad Grade Crossings.

In the case of the Lake Erie, Alliance & Wheeling Company against the Atlantic & Great Western, a suit to acquire the right to cross the latter road at grade near Braceville, O., the defendant set forth that the crossing would be a great detriment to its road and further that another location of the new road could be made by which a grade crossing could be avoided. The suit was in the Probate Court of Trumbull County, O., and that Court finally decided not to grant the application. After specifying the various statutes bearing upon the case, the Court concludes that its duty is not merely ministerial, but that it must be satisfied as to the necessity of the crossing. In conclusion the Court says:

"The necessity mentioned in the statute is not to be construed in the sense of being absolutely indispensable, but rather in that sense in which an impartial tribunal would say there was a reasonable necessity under the circumstances surrounding the case."

"It must also be borne in mind that the right of eminent domain can only be exercised for the public good, and that the interest and safety of the public are never to be lost sight of in determining the necessity for an appropriation."

"The railroad companies, plaintiff and defendant, stand upon the same footing. Both are considered highways in which the public have interests and rights."

"Defendants acquired their rights and constructed their roads some years ago, and it is now one of the leading thoroughfares of the country. Plaintiffs now organize their company and seek to construct their road, and in doing so they wish to cross the defendant's track. It is right they should do so. Both corporations stand equal before the law. But in so crossing, the latter company must not destroy or unreasonably interfere with the former. Nor may they unnecessarily impair the efficiency or usefulness of defendant's road. It is the public interest which allows them to proceed, and in proceeding they must not unnecessarily impair the interests and rights of the public in the road already constructed. As it is for the interest of the public that private property may be taken, so the interest of the public may be considered higher than the interest of private persons in determining the necessity of appropriation. It is by the application of these principles to the evidence before the court, that this question is to be determined. The testimony clearly shows that by crossing at the point proposed by plaintiff the defendant's road will be unreasonably interfered with and injured, that its efficiency will be greatly and unnecessarily impaired, and that the hazard of the traveling public will be unwarrantably increased. The survey, in evidence, shows that these difficulties and dangers can to a very great extent be easily avoided by the plaintiff, with no loss to itself, except some additional cost of right of way, while in all other material respects its own condition would by the change be improved. And, with due regard to that evidence, to the rights of the parties, and to the interest and safety of the public, I cannot say that the necessity for the appropriation or the crossing at the point asked has been satisfactorily proved."

#### OLD AND NEW ROADS.

##### Alamogosa.

A company by this name has been organized to build a railroad from El Moro, Col., the present southern terminus of the Denver & Rio Grande, southwest to Alamogosa on the Rio Grande in Conejos County, a distance of 35 miles.

##### Atchison, Topeka & Santa Fe.

The Treasurer's report for August and the eight months ending Aug. 31 is as follows:

	August.	Eight months.
Freight earnings.....	\$177,206 67	\$960,887 13
Passengers.....	71,278 92	461,084 31
Express, mail, etc.....	7,086 78	57,413 89
Total.....	\$255,572 17	\$1,479,385 33
Operating expenses.....	110,780 24	815,329 74
Net earnings.....	\$144,791 93	\$664,055 59
Per cent. of expenses.....	43.34	55.11

As compared with 1876, the month shows an increase of 3 per cent. in gross and of 11.1 per cent. in net earnings; the eight months a decrease of 0.9 per cent. in gross, and of 9.6 per cent. in net earnings.

##### Boston & Albany.

The board of directors has voted to rebuild the Springfield car shops recently burned, and not to remove the work to the Allston shops. No decision has been made however, as to plans, or as to rebuilding the shops on the old site.

##### Buchanan & Clifton Forge.

The grading of this road is now well advanced, and the company expects to have the earth-work and much of the masonry completed by the end of November. A tunnel and some rock cutting will then be left, upon which work can be carried on through the winter, and the convict labor given by the State will be employed on this work and in getting out ties and timber for the road. The company is now trying to secure subscriptions for its bonds on the line of the road and in Richmond and Lynchburg, with fair success thus far. The road is



to extend from Buchanan, Va., the terminus of the James River & Kanawha Canal, nearly due north up the James River to Clifton Forge on the Chesapeake & Ohio Railroad.

#### Baltimore & Ellicott City.

A company by this name has been organized to build a narrow-gauge railroad from Baltimore to Catonsville and Ellicott's Mills, a distance of nine miles. The surveys have been completed and estimates made of the cost of the road, and negotiations are in progress for the right of way. The road is designed for suburban traffic, but may be connected ultimately with the Washington, Cincinnati & St. Louis Railroad at Washington.

#### Baltimore & Hanover.

This road is to connect the Western Maryland at Reisterstown, Md., with the Bachman Valley road at Black Rock, and through that road with the Hanover Junction, Hanover & Gettysburg. Two routes have been surveyed, one following the Hanover turnpike, 17 miles long, and one through the Worthington Valley, 21 miles long, the former being not only the shortest, but also the easiest of construction. On both lines most of the right of way has been offered free. Subscription books to the stock have been open for both lines, and the amount offered will probably decide which will be adopted. The longer and probably more costly line will, it is claimed, accommodate the largest amount of local business. The board of directors was to meet this week, to decide upon the route and to make arrangements for building the road.

#### Buffalo, New York & Erie.

The trustee gives notice that he will anticipate the payment of an additional \$500,000 of the old first-mortgage bonds falling due Dec. 1. This amount is in addition to \$600,000 paid off in August and September.

#### Burlington & Northwestern.

Subscriptions are being asked for an extension of this road from Winfield, Ia., northwest to Crawfordville, seven miles. The extension will be built this fall, provided money enough is subscribed.

#### Baltimore & Ohio.

The covered wooden bridge over Wills Creek, near Cambridge, O., was burned early on the evening of Sept. 29, having caught fire from loco active sparks. The bridge was close to the tunnel at that point, and passengers and baggage had to be transferred in wagons around the tunnel hill. A large force of men was put to work at once and a temporary bridge was completed so that trains passed over Oct. 1.

#### Chicago, Burlington & Quincy.

This company has completed an extension of the branch from Sagetown, Ill., to Keithsburg, which it bought with the St. Louis, Rock Island & Chicago road, northward three miles to New Boston, where it connects with the Galva & New Boston Branch. Local trains are now run between Galva and Burlington, by way of New Boston.

#### Conductors' Brotherhood.

The annual session of the Grand Division of the Conductors' Brotherhood began in Elmira, N. Y., Oct. 2, and is expected to last four or five days. The sessions are secret. Delegates are reported present from 53 sub-divisions of the Brotherhood.

#### Columbus, Chicago & Indiana Central.

The Trustees and Receivers give notice that they will pay, at the office of A. Iselin & Co., No. 48 Wall street, New York, the coupons due April 1, 1877, on Union & Logansport 7 per cent. bonds, and the coupons due July 1, 1877, on Indiana Central 10 per cent. bonds.

#### Columbia Conduit Company.

This company, which, some two years ago, nearly completed a pipe line through to Pittsburgh from the oil region, but subsequently discontinued through shipments under an arrangement with the Pennsylvania Railroad Company, has sold out its property to the Standard Oil Company, of Cleveland, which secures by this purchase almost complete control of the system of oil-pipe lines in Western Pennsylvania. The effort of the Columbia Company to establish a through line to Pittsburgh attracted much attention at the time, and was the cause of some litigation.

#### Cincinnati & Portsmouth.

Track is reported laid from Cincinnati eastward to Mount Carmel, 11 miles. The bridge over the Miami River is completed. The locomotives have been received and put on the road.

#### Central Pacific.

This company's engineers have been running a line from Bantas, Cal., south by east up the west side of the San Joaquin valley, striking the Goshute Branch of the Southern Pacific at Lemore's, near the head of Tulare Lake. The distance is about 135 miles, the line being nearly parallel to that of the Visalia Division and from 20 to 40 miles distant, the distance gradually increasing, and being greatest at the southern end.

#### Cleveland & Perry County.

A meeting was held last week in Cleveland, O., to consider the question of building a narrow-gauge road from that city nearly due south through Medina, Wayne, Holmes, Coshocton and Muskingum Counties to the coal fields of Perry County, a distance of about 135 miles. The advocates of the line claimed that it could supply Cleveland with excellent coal at a cheap rate, would pass through a good country and reach several important towns. After some discussion, a committee was appointed to organize a corporation to build the road.

#### Chicago, Saginaw & Canada.

In a suit brought by D. E. Sickles and others, who hold \$200,000 bonds of the company, the New York Supreme Court has ordered that 3,574 bonds held by Benjamin Richardson be canceled and declared void. It was claimed that Richardson, at one time General Manager of the company, afterwards obtained a judgment against it and caused the unsold bonds to be levied upon in satisfaction thereof. The bonds were sold by the sheriff and bought in by Richardson at a nominal price. The plaintiffs had given value for their bonds and claimed that these proceedings were had by collusion with officers of the company and with intent to destroy the value of their bonds. The Court supported this view and decided that the bonds must be canceled.

#### Cincinnati, Rockport & Southwestern.

The bondholders have offered to exchange their present 10 per cent. bonds for a new issue of 7 per cent. bonds, provided the stockholders will pay off the floating debt and extend the road to Jasper, Ind.

#### Detroit & Milwaukee.

A meeting of the bondholders was held in Detroit, Sept. 27, a large number of the American holders being present, together with Capt. Pavy, of London, representing the English holders and Sir Hugh Childers, President of the Great Western Company. Capt. Pavy stated that the English bondholders were not satisfied with the present condition of affairs and desired that the company should be reorganized at once. Sir Hugh Childers, for the Great Western, made the following proposition: That the company be reorganized at once and issue \$2,000,000 first-mortgage bonds to be used to take up the Detroit & Pontiac and Oakland & Ottawa bonds, the receiver's certificates and other prior liens, and to put the road in good

repair; a second mortgage for \$3,000,000 to be made, holders of the present first and second-mortgage bonds to receive these new second-mortgage bonds for two-thirds of the amount of their present holdings; the Great Western to control the road, by lease or otherwise, and to guarantee interest on the bonds.

Mr. John S. Newberry, of Detroit, in behalf of the American bondholders, offered to buy the road for \$5,000,000, payable \$500,000 in cash and \$4,500,000 in 5 per cent. bonds, \$2,000,000 of these bonds to be used in settlement of the prior liens, \$2,250,000 in exchange for the old first and second-mortgage bonds at 50 per cent., and \$250,000 for repairs, etc. Each party named committee in its interest and, after a long debate, Capt. Pavy withdrew from the meeting, declining to take further part and intimating his readiness to fight the opposing party by all possible means.

An adjournment was then had until the following day. At the second meeting, after another animated debate, a committee was appointed to consider all propositions for the reorganization of the company. The committee consists of Messrs. S. W. Douglas, Elisia Taylor and H. B. Ledyard, of Detroit. Capt. Pavy was present at the adjourned meeting and took part in the proceedings.

#### Denison & Southwestern.

The contract for grading, bridging and ironing the first section of 20 miles from Denison, Texas, has been let to John Scullin, of St. Louis. A force of men is already at work clearing the right of way.

#### Dividends.

Dividends have been declared as follows:

Dubuque & Sioux City (leased to Illinois Central), 2 per cent., payable Oct. 15.  
Lowell & Lawrence (leased to Boston & Lowell), 3 per cent., semi-annual, payable Oct. 1.  
Vermont & Massachusetts (leased to Fitchburg), 2½ per cent., semi-annual, payable Oct. 8.  
Housatonic, 2 per cent., quarterly, on the preferred stock, payable Oct. 15.  
Topeka Equipment Co., 5 per cent., semi-annual, payable Oct. 1.

#### Foster Brook.

A company by this name has been organized to build a line along Foster Brook from Tarport to Gilmor City, with a branch to Babcock, N. Y., on the Buffalo, Bradford & Pittsburgh Branch of the Erie. The line is in the new Tuna Valley oil region. It is proposed to build it on the one-rail system of Roy Stone.

#### Foreclosure Sales.

Sales of railroad property under judicial order are reported as follows:

Louisville, Cincinnati & Lexington, in Louisville, Ky., Oct. 1, under a decree of foreclosure granted by the Kentucky Court of Chancery. The sale included the lines from Louisville, Ky., to Lexington, 93.7 miles, and from Lexington Junction to Newport, 81 miles, 174.7 miles in all. The sale was made subject to prior mortgages amounting to \$3,107,000 in all, as follows: Louisville City mortgage, \$100,000; Louisville & Frankfort mortgage of 1857 to Guthrie, McKnight & Bowler, \$7,000 still outstanding; Green trust-deed of 1867, \$3,000,000. In addition to the lines owned the Newport & Cincinnati Bridge, 1.1 miles; the Elizabeth, Lexington & Big Sandy road, 33.7 miles, and the Louisville Railway Transfer, 4.13 miles, are worked under lease. The property was bought for \$731,000 by Messrs. Charles Tilden, Jacob Krieger, Jr., F. S. Schmidt and John Bangs, who represent a combination of the second-mortgage bondholders and floating debt creditors. It is reported that the road will hereafter be controlled in the joint interest of the Louisville & Nashville and the Pennsylvania Company. The net profits for the last fiscal year were sufficient to pay nearly 8½ per cent, on the debt remaining on the road.

Future sales are announced as follows:

The Selma & Gulf road will be sold Nov. 19, at the Court House of Dallas county, Ala., under a decree of foreclosure granted by the Alabama Court of Chancery for said county. The property will be sold in one lot at a sum not less than \$150,000. The purchaser must pay \$50,000 in cash on the day of sale and the balance at such time as the Court may direct, either in cash or in the first-mortgage bonds and overdue coupons. The road was intended to run from Selma, Ala., south to the Florida line in the direction of Pensacola; it is completed from Selma to Pine Apple, 40 miles.

#### General Freight Agents' Meeting.

A meeting of general freight agents was held in New York last week, at which were present representatives of the Michigan Central, Lake Shore, Canada Southern, Indianapolis & St. Louis, Vandalia Line, Ohio & Mississippi, Marietta & Cincinnati, Wabash and Toledo, Peoria & Warsaw railroads. The meeting was called to secure the aid of the trunk lines to enforce freight agreements. The convention appointed a committee to arrange the details of work and new rates, and to wait on the managers of the trunk lines. This committee reported that the presidents would aid in enforcing the rates agreed on by the Western roads. This has reference to east-bound business, and does not in any way affect the apportionment scheme of the trunk lines by which west-bound business is divided. The principal trouble referred to was the alleged cutting of rates on live stock, which was said to be done by the allowance of drawbacks to cattle-dealers. This matter was referred to a special committee, which is to report at the next meeting.

#### Grand Rapids & Indiana.

The trustees under the first mortgage will receive at the office, No. 23 Fifth avenue, New York, until Oct. 20, proposals for the sale to them of \$40,000 bonds for the sinking fund, as provided by the terms of the mortgage.

#### Hudson Tunnel Railroad.

The commissioners appointed to appraise land taken by this company from the Delaware, Lackawanna & Western in Jersey City awarded the latter about \$24,000. The Tunnel Company appealed to the Circuit Court and has secured a reduction of the award to \$7,000.

#### Indianapolis, Bloomington & Western.

Receiver Wright has concluded an agreement with the Pennsylvania Company for interchange of business, under which this road will have the Peoria business which has heretofore gone by way of Logansport, State Line and the Toledo, Peoria & Warsaw road.

#### Kansas Central.

On the extension of this road from Holton, Kan., westward track is now laid to Soldier Creek, 12 miles, and trains are running to Circleville, six miles beyond Holton. Work on the grade is in progress as far as the crossing of the Vermilion in Kottawatomie County, 12 miles further.

The laborers employed by the contractor for the grading struck a few days since, not having received their wages as promised, and endeavored to prevent the tracklayers from working. The Sheriff being called on went to the point of disturbance with a posse, and a fight ensued, in which one of the strikers was killed.

#### Kansas City, Memphis & Mobile.

It is now proposed to utilize some of the work done on this road by laying track on the graded road-bed from Kansas City,

Mo., to Harrisonville and building from that point southward to the coal fields near Butler. The distance from Kansas City to Harrisonville is about 35 miles; from Harrisonville to Butler, 30 miles. An offer has been made to build the road, provided \$250,000 can be raised along the line.

#### Long Island.

The coupons due Oct. 1 on the bonds of the leased New York & Rockaway road were not paid. The Long Island Company has also issued the following circular with regard to another of its leased lines: "The earnings of the Smithtown & Port Jefferson Railroad during the past year have not been sufficient to pay operating expenses. The Smithtown & Port Jefferson Railroad Company is now indebted to this company in an amount exceeding \$170,000. This company is advised that it is not liable for the interest on the bonds of the Smithtown & Port Jefferson Company, and therefore refuses to pay the same."

Interest on the company's own bonds has been punctually paid. Mr. Conrad Poppenhusen, who controls the Long Island Company, has recently recovered judgments against the Southern Railroad Company of Long Island for \$374,307.48, and against the Flushing, North Shore & Central for \$410,090.46 for money advanced by him personally. Both roads are leased to the Long Island, and in both Mr. Poppenhusen himself is the largest stock-holder.

In a suit brought some time ago to enjoin the execution of leases of the Southern and the Flushing, North Shore & Central roads, the Court has sustained a demurrer interposed by the company.

#### Meetings.

Meetings are announced as follows:

Cincinnati, Sandusky & Cleveland, annual meeting at the office in Sandusky, O., Oct. 17, at 10 a. m.  
Columbus, Springfield & Cincinnati, annual meeting, at the office in Springfield, O., Oct. 18, at 3 p. m.  
Ohio & Mississippi, annual meeting, at the office in Cincinnati, Oct. 11.

#### Marietta & Cincinnati.

A meeting of the bondholders was held in Baltimore, Oct. 1, the object, as stated by the chairman, being to appoint a committee to watch over their interests, call other meetings if necessary, and act generally as advisers. The meeting voted to appoint a committee of ten, representing all classes of bondholders, and instructed the committee to ascertain definitely whether the road is run in the interest of its stockholders and creditors; whether the road is receiving its due proportion of through business from the Baltimore & Ohio, and if not, to see whether other and more satisfactory terms can be made. It was understood that the committee was not appointed in antagonism to the Baltimore & Ohio, but for the purpose of seeing that bondholders' interests are not neglected. The members of the committee are Messrs. S. H. Taggart, Wm. Whitlock, Ira L. Holden, Andrew Reid, John L. Gilman, S. Eccles, Israel Morris, John C. King, James Carey Cole and W. W. Spence.

#### Montclair & Greenwood Lake.

Mr. Hobart, the lately appointed Receiver, has not yet taken possession, the order of the Chancellor being suspended a few days to give the bondholders an opportunity to raise the amount needed to pay off the pressing claims, if they desire to do so.

Several meetings of bondholders having been held without any definite result in the way of raising money, the attempt appears to have been given up. It is said that the bondholders were willing to contribute enough to pay off the more pressing claims, but feared that in that case all the floating debt creditors would press for immediate payment. No settlement by the company being probable, Receiver Hobart was to take formal possession of the property Oct. 3.

#### Montreal, Portland & Boston.

In Montreal, Sept. 29, Mr. Lucius Robinson, of Newport, Vt., late General Manager, began suit to recover \$50,000 from the company, and also to set aside certain transfers of stock, which, it is charged, were fraudulently made.

#### Nebraska.

This road has been leased under a perpetual contract to the Burlington & Missouri River Railroad in Nebraska, which company is now operating the line. The Nebraska Railway, formerly known as the Midland Pacific, is completed from Brownville, Neb., on the Missouri River, to York, 133 miles, the last section of 28 miles from Seward to York, having been recently completed.

The Nebraska Company has executed a consolidated mortgage, covering its whole line, for \$1,836,000, the principal and interest (7 per cent.) of the bonds being guaranteed by the lessee. Of the new bonds \$1,500,000 are reserved to retire the existing bonds on the 103 miles from Brownville to Seward, and the remaining \$336,000 are offered for sale to pay for the extension from Seward to York. The Burlington & Missouri River Company in Nebraska will receive bids for the purchase of these bonds until Oct. 11, at its office in Boston. It is stated that nearly all the old bonds have been exchanged for those of the new issue.

#### New Orleans, Jackson & Northern.

A track connecting with this road has been laid along the levee at New Orleans, and grain cars brought by the road can now run directly to the elevator on the levee and be unloaded there. The road was completed Sept. 22, and the first carloads taken to the elevator on the same day. The cars were loaded with Kentucky and Tennessee wheat. The new track is about two miles long.

#### Northern Pacific.

At the annual meeting in New York, Sept. 26, a resolution was adopted instructing the board to begin construction from the Missouri westward and from the Columbia eastward as soon as practicable. Another resolution recommended that a limit of time be fixed after which the old bondholders shall cease to have the privilege of exchanging their bonds for the preferred stock of the new company. A third resolution instructed the board to take all necessary steps for an extension of the time for completion of the road without forfeiture of the land grant.

#### Norfolk & Princess Anne.

This company, which is organized to build a narrow-gauge road from Norfolk, Va., east to the sea-shore near Cape Henry, about 20 miles, now offers to receive subscriptions in land along the line of the road. No such subscriptions are to be binding unless \$40,000 are secured.

#### Pennsylvania.

The Philadelphia Ledger says: "The following is from an official report of the Pennsylvania Railroad for the month of August and for the eight months of this year, as compared with the respective periods in 1876: On all lines east of Pittsburgh and Erie the traffic for August of this year, as compared with the same month last year, shows a decrease in gross earnings of \$521,908, a decrease in expenses of \$98,468, and a decrease in net earnings of \$423,440. For the eight months of this year ending Aug. 31, as compared with the same period in 1876, the gross earnings show a decrease of \$3,468,991, the expenses a decrease of \$2,628,983, and the net earnings a decrease of \$840,008. All lines west of Pittsburgh show a decrease in net earnings for eight months, as compared with 1876, of \$966,831."

There is considerable local opposition to the relaying of the



freight track on Liberty street in Pittsburgh, many of the people on that street desiring to have the tracks removed altogether. The company claims that the track is necessary and that it has taken much pains to make it as little injury to the street as possible.

The tall elevator stack, standing opposite the Union Depot in Pittsburgh, which has been a prominent object since the destruction of the elevator in the late riots, has been taken down. It was considered unsafe, and its removal necessary. The work was accomplished by building a scaffolding up the inside to the top and then taking down brick by brick.

One of the round-houses at Pittsburgh has been demolished and will not be rebuilt. The extensive repair shops at that point will be partly rebuilt, as it is intended to do most of this work at Altoona hereafter.

#### Philadelphia & Reading.

The trial of the strikers charged with burning the bridge over the Schuylkill at Reading, Pa., is now in progress at that place. One of the rioters has turned State's evidence and testified positively to several of the accused persons as having assisted in the destruction of the bridge, and also to the fact that it was advocated and agreed upon in a meeting of strikers held the night before.

#### Philadelphia, Newtown & New York.

At a meeting held Sept. 27 the stockholders voted to mortgage the road to secure an issue of \$700,000 6 per cent. bonds, to raise the money required to complete the road from Fox Chase to Newtown, Pa.

#### Portland & Ogdensburg.

It is announced that enough of the bondholders have acceded to the proposition made by the Maine company to carry the compromise into effect. The proposition of the company is that the bondholders exchange the four overdue coupons for interest-bearing scrip, payable in 12 semi-annual installments. Meanwhile the trustees are to withdraw the application for a receiver, and to make a formal beginning of foreclosure proceedings, which, however, are to be allowed to rest until July, 1879, and then withdrawn, if the company meets the payments regularly.

The Portland City Council adopted, at a meeting held Oct. 1, a report of the committee on the Portland & Ogdensburg Railroad that the whole matter of the readjustment of the demands against the company of parties who hold as collateral second mortgage bonds of the company be left with those of the directors who do not hold bonds or collateral, and have no pecuniary interest involved, such adjustment to be approved by the Mayor of the city. The city of Portland is the largest holder of the company's securities.

#### Pittsburgh & Lake Erie.

The Pittsburgh *Dispatch* of Sept. 28 says: "The board of directors of the Pittsburgh & Lake Erie Railroad Company yesterday awarded the contract for the construction of that new route to J. B. McGrann, of Lancaster, for the sum of \$2,500,000. Of this amount, however, only \$1,050,000 is to be paid in cash, the contractor taking first-mortgage bonds of the road to the amount of \$1,250,000, and \$200,000 in stock of the company, thus being the amount of stock remaining unsubscribed. The contract is for the construction of the entire line between this city and Youngstown, including the bridge over the Ohio River at Philadelphia, but not including, however, the bridge across the Monongahela at the Pittsburgh end of the route, where it is to connect with the Baltimore & Ohio Railroad. The length of the road is 68 miles, and the contract calls for 10 per cent. additional roadway for sidings at such points as may be determined upon. The contractor is required to put the road in complete order, including the grading, cross-ties, steel rails, turn-table at each end of the road, and bridges wherever required, the latter all to be built of iron. The roadway is to be completely ballasted for its entire length with stone or cinder, and the work is all to be done under the supervision and direction of the Chief Engineer of the railroad company. The work is required to be done in first-class order and equal to any road in the United States. The terms of the contract require the completion of the work within twelve months from date. The Pittsburgh end of the road is at Jones & Laughlin's mill, at which point it is proposed erecting a bridge, where a connection will be made with the Baltimore & Ohio Railroad. At Youngstown direct connection is made with the Atlantic & Great Western Railroad, and will also, it is presumed, be made with the Lake Shore road."

"C. H. Andrews, of Youngstown; John Reeves, of Beaver Falls, and John F. Dravo, of Pittsburgh, were appointed an executive committee with full power, authorized and directed to proceed immediately to cause a final survey and location of the line of the railroad to be made between the terminal points named in the certificate of incorporation, and to proceed as soon as the same shall be done to procure the necessary right of way."

This road must not be confounded with the Pittsburgh, New Castle & Lake Erie, formerly the Pittsburgh & Northwestern, which is a distinct and rival project, though it is also to run from Pittsburgh to Youngstown.

#### Raleigh & Augusta Air Line.

The track is now laid to the crossing of the Carolina Central at Hamlet, N. C., which is 12 miles beyond the late terminus and 98 miles southwest from Raleigh. Trains will run through this week. This completes a new line from Raleigh to Charlotte, by this road and the Carolina Central, which is 176 miles long, or very nearly the same as the North Carolina Railroad between the same points.

#### Southern Minnesota.

This company is now paying, at its office in New York, the coupons on the first-mortgage (pink) bonds due Oct. 1, 1877, and also those on the same bonds which were due April 1, 1872.

#### Southern Pacific.

The bridge over the Colorado River at Fort Yuma is completed, and the first regular train crossed over to the Arizona side of the river Sept. 30. The work on the line in Arizona from Fort Yuma eastward is being pushed forward rapidly, and tracklaying has been begun.

#### Southwestern Railroad Rate Association.

At the monthly meeting in Chicago, Sept. 27, the amended constitution proposed at the previous meeting was adopted. The principal change is in providing for greater permanence in the organization, and in providing for the employment of an agent, to be appointed by the Executive Committee, who is to have charge of all the business from the Missouri River points (Kansas City, Leavenworth, Atchison and St. Joseph) eastward, which is to be apportioned among the roads as is west-bound business from New York among the trunk lines. His headquarters are to be at Kansas City.

#### Toledo & Delphos.

This road is now completed to Dupont, O., 15 miles north by east from Delphos, and 10 miles beyond the late terminus at Jennings. The work is being pushed, and the company hopes to have cars running to Holgate, the crossing of the Baltimore & Ohio, this year.

#### Tennessee Railroad Taxation.

The Knoxville (Tenn.) *Whig and Chronicle* says: "We are informed by the Attorney-General of the State that the temporary stop order, granted by Chancellor Cooper in the railroad tax cases, at Nashville, was consented to by him for the

reason that the interest of the State, as a body, was in conflict with the interest of the counties and towns, and for that reason he could not properly represent both. He therefore desired that the counties and towns interested in the railroad taxes should have the opportunity to be represented by counsel on the application for the formal injunction. Neither the State nor the counties or towns are nominally parties, but the Comptroller alone.

"We understand the conflict to arise in this way: By the act of 1875 the State agreed to accept 1 1/2 per cent. of the earnings of each railroad company in lieu of all other taxes for ten years. This was held, by the Supreme Court last winter, as to the Louisville & Nashville Railroad Company, which had no exemption, to be void. The roads claiming exemptions now file bills to set up the fact of their yielding their exemption, as making a contract upon valuable consideration binding upon the State. If they succeed the railroad companies will pay into the State treasury a much larger sum of money than they will if they fail. On the other hand, if they succeed the counties and towns will get nothing for ten years. The State is therefore interested in the view of the railroad, and the Attorney-General argued in favor of that view in the case at Nashville last winter. The counties are interested in the other view. The motion for the formal injunction is to be made in the Chancery Court at Nashville on the first Monday of October, but will probably be continued to the second Monday to give the counties time to act and to enable the Attorney-General to be present."

#### Union Railway, Transfer & Stock Yards.

This company's road, generally known as the Indianapolis Belt road, is now completed so that trains can pass from the Cleveland, Columbus, Cincinnati & Indianapolis road, at Brightwood, northeast of the city, around the south side to the Indianapolis, Bloomington & Western, west of the city, a distance of about 10 miles. Work is being pushed rapidly from Brightwood to the Indianapolis, Cincinnati & Lafayette crossing at North Indianapolis, which will complete the connection of all the roads entering the city. The second track is now being put down at many points and the necessary sidings at the railroad junctions are nearly completed. From the nature of the road, which is intended to connect the various lines entering Indianapolis with each other, and with the stock yards outside the city, and to avoid the necessity of passing freight trains through the city, it has a great many sidings, their mileage exceeding that of main track.

At the stock-yards of the company nearly all the buildings and sidings are ready, and the water-pipes and other accessory works are in progress. The water is to be derived from a large well which has been sunk, and which will, it is believed, yield an abundant supply.

#### Union Pacific.

Two of the men engaged in the robbery of the train at Big Springs, Neb., were overtaken near Fort Hayes, Kan., Sept. 26, by a sheriff and posse, and were killed in the fight that ensued. They had \$20,000 in gold with them.

#### Western Counties.

The Canadian Government has transferred to this company the Windsor Branch, from Windsor Junction, N. S., to Windsor, which it has held since Aug. 1, and which was previously worked by the Windsor & Annapolis Company. That company, which claims to have a lease of the line, now refuses to allow any of its cars to run over the branch, and all freight and passengers have to be transferred at Windsor. The branch is transferred to the Western Counties Company as part of the bonus given it by the Government for building its road.

#### Wilmington & Northern.

Application has been made to the United States Circuit Court in Philadelphia for an injunction to restrain this company from issuing \$1,253,100 mortgage bonds, as proposed and authorized by the stockholders. The applicants claim that no consideration is to be received for these new bonds.

#### Walkill Valley.

The Erie has ceased to furnish train service to this road, and the company is now working its own line. All transfers of passengers and freight are now made to the Erie at Montgomery, the terminus of the Montgomery Branch, instead of at Gothen, the junction of that branch with the main line.

#### Waynesburg & Washington.

This company is offering \$50,000 of its 7 per cent. first-mortgage bonds for sale at 95, for the purpose of completing its narrow-gauge road from Waynesburg, Pa., to Washington.

### ANNUAL REPORTS.

#### Northern Pacific.

This company, with a projected line of 1,800 miles from Lake Superior to Puget Sound, owns 533 miles of completed road now in operation: The Minnesota Division, from Duluth, Minn., at the head of Lake Superior to Fargo, on the Red River of the North, 254 miles, of which 24 miles, from Duluth to Thomson Junction, are owned in common with the St. Paul & Duluth Company; the Dakota Division, which extends the line from the Red River westward 194 miles to Bismarck on the great bend of the Missouri in central Dakota; and the Pacific Division, from Kalama on the Columbia River in Washington Territory, northward to New Tacoma on Puget Sound, 105 miles. An extension of the Pacific Division from New Tacoma to the Puyallup coal field, 31 miles, is nearly completed. The history of the road is well known; the present company acquired the property some two years ago through foreclosure of mortgage, and its second annual report covers the operations of the road for the year ending Aug. 31, 1877.

The general balance sheet is as follows:

Credit:		
Capital stock	\$100,000,000 00	
Assets acquired under decree of court	44,966,583 21	
Balance of net earnings from previous year	235,879 93	
Net earnings, Sept. 1, 1876—July 31, 1877	351,103 73	
Land receipts	1,695,671 46	
Interest	1 973 88	
Total	\$147,251,212 21	
Debit:		
Preferred stock	\$51,000,000 00	
Less issued	41,910,976 35	
	\$9,089,023 65	
First-mortgage bonds, etc., surrendered and interest	36,786,248 48	
Preferred stock, placed as collateral and indemnity	5,075,711 20	
Preferred stock, issued for lost certificate	2,000 00	
Common stock	\$49,000,000 00	
Less issued	13,955,500 00	
	35,044,500 00	
Old company's stock surrendered	13,955,500 00	
Construction account	19,464,189 31	
Equipment	1,681,593 86	
Materials and fuel on hand	115,659 42	
Trustees of land stocks	735,000 00	
Connecting lines	81,597 74	
Lands, Minnesota and Dakota districts	\$18,605,949 92	
Lands, Pacific District	5,119,456 79	
	23,725,406 71	
Preferred stock received on land sales	1,709,317 06	
Claims secured by collaterals	282,713 87	
Bills receivable, taxes paid, agents' balances, sundry accounts	94,444 70	
Treasurer's cash balance	8,206 21	
Total	\$147,251,212 21	

The construction account was increased by \$541,069.81 during the year. The preferred stock has been issued in exchange for the old bonds and unpaid interest thereon, and, like the bonds which it replaced, is receivable at par in payment for lands.

The company has a great land grant, varying very much in quality, however, most of it being poor and barren, while in the Red River valley it includes some extremely good wheat lands, and in the Pacific District much of it is covered with timber which will be valuable in time. The Land Department gives the following figures:

Land sales, 270,996.6 acres	\$1,217,484 49
Deferred payments on contracts	1,688 89
Interest	206 04
Stampage sales	11,573 04
Town lot sales	1,804 68
Total	\$1,232,851 74
Payments in cash	\$13,756 24
Payments in preferred stock	1,219,062 17
Deferred payment account	33 33
	1,232,851 74

During the same period nearly 337,000 acres of Government lands have been taken up by settlers within the limits of the company's grant. A large part of the lands taken up and sold are under cultivation, and nearly 75,000 acres on the line of the road were planted with wheat this year.

The President's report, which alone has yet been published, gives no statistics of traffic; the earnings for the year are reported as follows:

	Minnesota Div.	Dakota Div.	Pacific Div.	Total.
Passengers	\$161,824 70	\$187,427 50	\$63,239 62	\$385,491 82
Freight	398,073 17	73,267 88	47,513 85	518,854 90
Mail and express	23,179 12	15,381 77	6,329 63	44,890 52
Miscellaneous	10,288 52	7,297 61		17,586 13
Total	\$593,365 51	\$283,374 76	\$20,083 10	\$896,823 37
Working exp'ts	336,107 87	159,731 10	77,285 93	573,124 90
Net earnings	\$256,257 64	\$93,643 66	\$12,797 17	\$362,698 47
Gross earn. per mile	2,332 15	1,306 06	1,143 65	1,746 52
Net earn. per mile	1,008 89	482 70	407 69	710 12
Per cent. of exp'ts	56.74	63.04	64.36	59.34

The Dakota Division was kept open and operated during the winter for the first time, and the snow-fences and other protections served to prevent serious interruption to business. The division paid its expenses during the winter. A fleet of 30 steamers now plies between Bismarck and the forts and trading posts on the upper Missouri and Yellowstone, bringing a considerable freight and passenger traffic to the road. The Minnesota Division also receives a considerable traffic from the Red River boats. The carriage of immigrants and their effects has formed a considerable item of business, and another important item has been the travel to the Black Hills, to which a road has been opened from Bismarck, the distance being about 200 miles.

Extensive repairs and renewals of bridges have been made. It has been necessary to lay about 250,000 ties between Duluth and Bismarck, those originally put down having been of poor quality and decaying rapidly.

The net earnings of the entire line were 0.77 per cent. upon the \$51,000,000 preferred stock, or 0.39 per cent. upon the whole stock capital; they were just sufficient to pay 7 per cent. upon a capital of \$10,000 per mile. No statement of the disposition of net earnings is given.

The report refers to the measures taken to secure the completion of the Brainerd Branch of the St. Paul & Pacific under control of this company, and to the organization of the Western Railroad Company of Minnesota for that purpose.

Reference is also made to the expediency of building the 205 miles of road from Bismarck west to the mouth of Glendive River on the Yellowstone. The work would generally be light, with no expensive bridges except that over the Missouri at Bismarck, and it is believed that \$15,000 per mile would cover the cost of the work. It is also thought advisable to begin as soon as possible the construction of the Pend d'Oreille Division, from the mouth of Snake River on the Columbia to Lake Pend d'Oreille in Eastern Idaho, about 200 miles. This section passes through a very fertile region, which is now attracting many settlers. It would be separated by about 250 miles from the present Pacific Division, but would have an outlet through the navigable waters of the Columbia.

The branch from New Tacoma to the Puyallup coal fields, now nearly completed, is 31 miles long, and will reach large beds of coal of good quality and easily worked. The cost, including coal wages and development of mines, will be about \$60,000, \$300,000 of which has been met from net earnings and the rest by temporary loans.

Reference is made to the failure to secure an extension of time for the completion of the road from the last Congress, which was due, not to any opposition, but to the occupation of time by pressing political questions.

#### Louisville, Cincinnati & Lexington.

This road has been in the hands of a receiver for some time, pending proceedings in foreclosure, and a recently issued report gives a statement of the operations from the commencement of the receivership, Sept. 21, 1874, up to June 30, 1877. The property consists of a line from Louisville, Ky., to Lexington, 93.7 miles; a line from Lexington Junction to Newport, 81 miles, and the extension of the latter from Newport to Cincinnati, 1.1 miles, 175.8 miles in all. The Elizabeth, Lexington & Big Sandy road, from Lexington to Mt. Sterling, 37.7 miles, is worked, but only the net results appear in the statements. The Shelby road, from Shelby Junction to Shelbyville, was worked up to Sept. 1, 1876, when it was surrendered by order of the court. The Louisville Transfer road, 4.13 miles, is also worked under an agreement with the Louisville & Nashville Company, but its earnings are not included. The 1.1 miles from Newport to Cincinnati belong to the Newport & Cincinnati Bridge Company, and are worked under lease.

The equipment consists of 31 engines; 24 passenger and 14 baggage and express cars; 188 box, 95 stock box, 25 stock rack, 105 platform, 20 gondola and 10 caboose cars; 1 pay, 1 yard, 1 derrick, 1 wrecking, 8 boarding and 27 road cars.

The traffic for the year ending June 30, 1877, as compared with the previous year was as follows:

	1876-77.	1875-76.	Inc. or Dec.	P. c.
Train mileage, passenger	371,852	374,090	Dec.	2.38
" freight	233,384	204,978	Inc.	28,406 13.9
Total	605,236	579,068	Inc.	26,168 4.5
Av. receipt per passenger train mile	\$1.2880	\$1.3322	Dec.	\$0.0442 3.3
Av. receipt per freight train mile	2.4268	2.4816	Dec.	0.0548 2.2
Passengers carried, local	317,700	344,509	Dec.	26,809 7.7
" through	68,080	56,798	Inc.	11,282 19.9
Tons freight carried, local	156,216	150,272	Inc.	5,944 4.0
" through	14,037	11,397	Inc.	2,640 24.2
Av. receipt per passenger per mile	3.001 cts.	3.125 cts.	Dec.	0.124 ct. 4.0
Net earnings per passenger per mile	0.592 "	0.632 "	Dec.	0.040 " 6.3
Av. receipt per ton per mile	2.837 "	2.533 "	Inc.	0.304 " 12.0
Net earnings per ton per mile	0.922 "	0.641 "	Inc.	0.181 " 28.3

The rates received on the Lexington line were much better than on the Cincinnati line, the average receipts per train mile on the former being \$2.4360, against \$1.4211 on the latter,



The chief business of the Cincinnati line is through, and of the Lexington line local. The earnings for the two years were:

	1876-77.	1875-76.	Inc. or Dec.	P. c.
Passengers.....	\$427,006 40	\$443,894 38	Dec. \$16,887 98	3.95
Freight.....	566,388 77	508,561 87	Inc. 57,826 90	11.37
Express and mail	50,944 68	54,483 54	Dec. 3,538 86	6.49
Telegraph, etc....	5,029 06	4,747 86	Inc. 281 20	5.98
Total.....	\$1,049,368 91	\$1,011,687 60	Inc. \$37,681 31	3.66
Operating expenses.....	752,018 76	734,708 04	Inc. 17,220 72	2.34
Net earnings.....	\$297,350 15	\$276,979 56	Inc. \$20,370 59	7.38
Gross earn. per mile.....	5,969 11	5,754 76	Inc. 214 35	3.66
Net earn. per mile.....	1,691 41	1,575 02	Inc. 116 39	7.38
Per cent. of exps.	71.66	72.63	Dec. 0.97	1.34

The earnings and expenses were divided between the Lexington and Cincinnati lines as follows:

	Gross earn.	Expenses.	Net earn.	P. c. of exps.
Lexington Line.....	\$482,564 10	\$253,461 79	\$229,102 31	52.52
Cincinnati Line.....	566,804 81	498,556 97	68,247 84	87.96
Total.....	\$1,049,368 91	\$752,018 76	\$297,350 15	71.66

There were used in renewals last year 2,498.86 tons iron rails, 16.34 tons steel rails and 87,377 new ties. There are yet in the track between Lagrange and Lexington 33 miles of iron rails laid in 1849 and 1850 and still in good condition, though beginning to wear out rapidly.

The Newport & Cincinnati Bridge is operated under a guarantee of \$75,000 annual traffic; the actual traffic last year was \$53,070.32, leaving a deficiency of \$21,929.68, half to be met by this road. To meet this, however, an arbitrary charge on freight over the bridge is retained, which amounted to \$20,880.14, leaving a net profit of \$3,415.30.

The Louisville Railway Transfer showed for the year earnings of \$51,525.20; expenses, \$19,531.59; net earnings, \$31,993.61; interest, etc., \$30,146.39, leaving net profit \$1,847.22. The Elizabeth, Lexington & Big Sandy earned \$58,401.32; expenses, \$39,637.28; net earnings, \$18,764.04; rental, \$19,467.09; loss for the year, \$703.05.

The general results for the two years and nine months are stated by the Auditor as follows:

	Sept. 21, 1874, to June 30, 1875, 9½ months	Year ending June 30, 1876.	Year ending June 30, 1877.
Gross earnings of L., C. & L. line.....	\$783,721 28	\$1,011,687 60	\$1,049,368 91
Operating expenses.....	625,800 67	734,708 04	752,018 76
Net transportation earnings.....	157,920 61	276,979 56	297,350 15
Rentals, taxes and guarantees.....	66,437 36	71,073 03	60,639 90
Net profits of L., C. & L. line.....	91,483 25	205,906 53	236,710 25
Interest on daily balance	4,030 48	17,012 44	20,270 14
Profits operating Shelby R. R.....	9,652 00	7,960 90	2,185 34
Net profit subject to order of court.....	105,165 73	230,839 87	279,165 73

"The notable decrease in the rentals, taxes and guarantees for the year 1877 has resulted mainly from the increased tonnage of through freight, it adding to the earnings of the Louisville Railway Transfer and the Newport & Cincinnati Bridge sufficient to make said lines profitable, whereas they have been previously operated at a loss."

#### Pullman Palace Car Company.

The report is for the year ending with July, 1877.

The stock of cars within the year increased from 451 to 460, the average cost being reported at \$18,677 this year against \$18,500 in 1876.

The capital account for the two years was:

	1877.	1876.
Cost of cars and equipments, including franchises.....	\$8,491,252	\$8,343,270
Car works at Detroit.....	343,423	341,370
Patents.....	164,383	149,364
Furniture, etc., in offices (52 in number).....	62,586	62,443
Real estate.....	21,900	21,901
Investments in other car associations controlled and operated.....	2,392,577	2,309,658
Material and supplies, including amount paid on unfinished cars.....	266,122	420,298
Balance of accounts and bills receivable over those payable.....	147,892	.....
Cash on hand.....	70,042	25,485
Total assets.....	\$11,960,284	\$11,667,790
Increase in 1877.....	292,494	.....
Liabilities.....	1877.	1876.
Capital stock.....	\$5,938,200	\$5,938,200
8 per cent. currency bonds.....	298,000	298,000
2d series, due May 15, 1881.....	432,000	432,000
3d series, due Feb. 15, 1887.....	816,000	816,000
4th series, due Aug. 15, 1892.....	603,000	603,000
7 per cent. currency bonds, due Oct. 15, 1878.....	218,000	204,500
7 per cent. sterling convertible bonds, due April 1, 1885.....	419,013	385,400
Amounts received from old cars leased from Central Trans. Co.....	114,441	.....
Balance of bills payable over bills receivable.....	\$8,724,213	\$8,861,541
Total liabilities.....	\$11,960,284	\$11,667,790
Surplus invested in Assets.....	.....	.....
Guarantee fund—to provide for taxes in disputes and possible losses in unsettled accounts.....	\$53,728	\$175,000
Sinking fund for possible depreciation in franchises and patents.....	500,000	400,000
Balance to credit of income account.....	2,682,342	2,231,249
Total surplus.....	\$3,236,070	\$2,806,249
Total.....	\$11,960,284	\$11,667,790

The chief changes in liabilities are the decrease of \$70,000 in the 8 per cent. bonds due in 1892, and the increase of \$13,500 in sterling 7s due in 1885.

The total funded debt at the close of the last year was:

	Principal.	Yearly Interest.
Currency 8s.....	\$1,546,000	\$123,680
Currency 7s.....	603,000	42,210
Sterling 7s.....	218,000	15,260
Total.....	\$2,367,000	\$181,150

This debt amounts to \$5,145 per car owned by the company, and to pay interest on it there must be net earnings of \$394 per car, \$33 of it in gold.

The income account is as follows:

	Principal.	Yearly Interest.
Currency 8s.....	\$1,546,000	\$123,680
Currency 7s.....	603,000	42,210
Sterling 7s.....	218,000	15,260
Total.....	<u>\$2,367,000</u>	<u>\$181,150</u>

	Working Expenses.	Disbursements.
Operating expenses, including legal expenses, taxes and insurance (leased lines included).....	\$617,518	\$623,764
Maintenance of upholstery and bedding.....	177,561	175,879
Proportion of operating and maintenance expenses in other lines operated by Pullman Co.....	189,393	190,567
Total working expenses.....	\$985,072	\$990,210
Net earnings.....	\$1,585,567	\$1,564,801
Other Charges:		
Rentals of leased lines.....	264,000	284,000
Profit and loss, including interest, discount and exchange.....	46,206	39,003
Total.....	\$310,206	\$317,003
Profit applicable to company's capital.....	1,275,361	1,247,798
The disposition of these net earnings was as follows:		
Interest on bonds.....	1877.	1876.
Dividends.....	\$183,373	\$197,266
Improvement of cars.....	471,056	526,578
Balance to credit of income account.....	69,837	42,406
	561,993	561,448
	\$1,275,361	\$1,247,798

The dividends paid for the last year reported amounted to 8 per cent. on the stock. The surplus of net earnings over interest charges was, however, equivalent to 18½ per cent. on the stock.

#### Michigan Central.

The report of President Sloan for the year ending May 31, 1877, the only portion of the report yet published, states the mileage of the road as follows:

"This railroad comprises 284 miles of main line between Detroit and Chicago, the Air Line between Niles and Jackson of 103.60 miles, with its local business being used as a second track, constitute 387 miles of track. There are 155.63 miles of sidings on these lines. There are 72.50 miles of double track in addition to that furnished by the air line, and all steel rail. The leased and branch lines, not including air line, are 416.12 miles in length, making a total of 803.72 miles operated. This extent of line has not been changed for the last five years."

The equipment includes 185 coal and 24 wood-burning engines, and 5,077 cars, of which 77 are first-class passenger, 27 second-class passenger, 489 stock, 6 refrigerators, 873 Blue Line, 498 combination, 1,641 merchandise, 1,904 platform cars, the rest being baggage, caboose and service cars.

The work done, so far as yet reported, was as follows for the whole line:

	1876-77.	1875-76.	Inc. or Dec.	P. c.
Train mileage.....	6,747,883	6,617,430	Inc. 130,453	2.0
Passengers carried.....	1,450,136	1,526,436	Dec. 76,300	5.0
Tons freight carried.....	3,056,386	2,686,248	Inc. 370,138	13.8

The renewals of road include 92 miles of steel rails and 260,088 ties.

The earnings for the year were as follows:

	1876-77.	1875-76.	Inc. or Dec.	P. c.
Freight.....	\$4,158,887 32	\$4,417,275 52	Dec. \$258,388 20	5.8
Passengers.....	2,026,265 44	2,138,233 41	Dec. 111,967 97	5.2
Mail.....	94,220 04	108,433 06	Dec. 14,213 02	13.1
Express.....	126,266 35	139,065 34	Dec. 12,798 99	9.2
Miscellaneous.....	92,487 61	47,966 73	Inc. 44,520 88	92.8
Total.....	\$6,498,126 96	\$6,850,964 06	Dec. \$352,837 10	5.2
Expenses and taxes.....	4,706,442 06	4,802,902 23	Dec. 96,460 17	2.0
Net earnings.....	\$1,791,684 70	\$2,048,061 83	Dec. \$256,377 13	12.5
Gross earnings per mile.....	8,085 06	8,524 07	Dec. 439 01	5.2
Net earnings per mile.....	2,229 24	2,548 23	Dec. 318 99	12.5
Per cent. of expenses.....	72.43	70.11	Inc. 2.32	3.3

The operating expenses for 1876-77 included \$100,000 for taxes properly belonging to previous years, making the real saving in expenses \$196,460.17. The report says: "Your directors have endeavored to examine the causes which have so largely reduced the income of this property, and have caused a statement to be prepared of the tonnage of the entire line moved in each year for six years (differing somewhat from previous reports, which confined the statement of freight traffic to the tonnage moved upon the main line only), from 1872 to 1877 inclusive, and the gross earnings from it, the expenses for each year, and the average rate per ton per mile, which is as follows:

	Tonnage.	Earnings from freight.	Receipt per ton mile.	Total expenses of operation.
1871-72.....	1,708,964	\$4,096,198 76	1.56 cts.	\$4,447,803 46
1872-73.....	1,999,671	4,652,873 92	1.57 "	4,989,955 46
1873-74.....	2,186,786	4,908,961 93	1.29 "	5,523,642 39
1874-75.....	2,375,496	4,447,858 09	1.16 "	5,068,097 76
1875-76.....	2,686,248	4,417,275 52	1.12 "	4,802,902 23
1876-77.....	3,056,386	4,158,887 32	0.88 "	4,706,442 06

#### The Minor Ohio Railroads in 1875-76.

The following figures are from the reports made to the Ohio Railroad Commissioner for the year ending June 30, 1876; they include only those roads which do not otherwise report, or whose operations are not included in reports of lessees.

NAME OF ROAD.	Property.		Liabilities.			Traffic.			Earnings.								
	Miles of road.	Freight and other cars.	Stock.	Funded debt.	Other debt.	Train mileage.	Passenger mileage.	Tonnage mileage.	Average receipt per passenger per mile.	Average receipt per ton per mile.	Gross earnings.	Expenses.	Net earnings.	Per cent. of expenses.			
Bowling Green.....	5	1	2	\$ 7,700	\$ 3,000	7,864	40,000	9,000	5.00	22.00	4,137	3,100	1,037	77.4			
Chicago & Canada Southern.....	68	17	3	2,667,400	2,564,350	179,935	102,365	646,952	1,831,122	3.00	1.96	83,553	99,580	*16,027	123.6		
Cleveland & Newburg.....	3	5	2	42,490	30,000	36,500	445,530	3,000	13,372	11,897	1,475	4,012	89.0				
Dayton & Union.....	32	5	7	86,300	502,445	108,286	2,422,850	2,483,500	2.19	1.99	108,276	73,645	34,631	2,317	68.0		
Eastern Ohio.....	8	1	1	1	1	9,300	58,181	20,195	4.00	10.98	5,103	2,440	2,663	65.8	47.8		
Iron.....	17	4	2	184	304,634	29,655	176,065	951,924	3.23	5.87	62,178	39,789	22,389	3,768	64.0		
Lake Erie & Louisville.....	87	6	7	82	1,115,650	890,000	568,392	152,639	1,877,000	2,484,448	2.97	2.73	133,073	111,526	21,547	1,530	83.8
Lake View & Collamer.....	8	2	2	4	68,860	25,000	28,056	25,499	236,175	2.77	.....	6,571	8,071	*1,500	859	122.8	
Marietta, Pitts. & Clev.....	101	9	10	137	1,473,632	3,530,000	434,950	156,985	.....	.....	144,006	95,029	49,577	1,439	65.7		
Ohio Central.....	7	1	1	20	1,122,430	44,600	224,368	.....	112,390	1.00	3,367	3,710	9,353	460	110.5		
Ohio & Toledo.....	22	2	3	7	90,000	61,645	20,000	60,950	34,400	4.54	9.97	7,174	9,166	*1,992	326	127.8	
Painesville & Youngstown.....	62	7	9	114	2,000,000	1,275,750	249,090	116,954	820,260	289,597	3.16	5.43	46,076	59,202	*13,126	746	128.5
Rocky River.....	6	3	6	9	75,863	30,000	5,975	34,122	616,460	2.00	.....	12,329	9,321	3,008	2,230	75	6
Scioto Valley.....	47	.....	.....	.....	510,100	680,000	85,597	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Toledo, Canada Southern & Detroit.....	55	.....	.....	.....	1,547,663	1,511,738	284,480	335,061	3,317,608	18,239,740	2.73	0.97	27,876	313,942	*36,066	5,099	113.0
Toledo & Maumee.....	8	2	1	5	41,419	10,991	6,735	31,342	513,146	1.80	.....	10,494	9,064	1,430	1,399	86.4	

\* Deficit. † Suburban lines, carrying passengers only.

‡ Passengers carried, 93,721; tons freight carried, 65,525; mileage not reported.

§ Lines under construction during the year.

The Ohio Central, the Painesville & Youngstown and the Toledo & Maumee are of 3 ft. gauge, the rest of standard or of 4 ft. 10 in. gauge. Since the close of the year the Lake Erie & Louisville and the Marietta, Pittsburgh & Cleveland have been sold under foreclosure and reorganized.